

Margay Troubleshooting, Maintenance, and Service Manual

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Preface

The Margay is a 50" (diagonal screen measurement) DLP™ video display unit. Margays may be installed in many different configurations (stand-alone, banner, tower, or wall) and can be mounted upright, flying or tilted.

The most common configuration is a wall of several units high by many units wide to create a large video screen.

Audience

This manual is intended for factory trained and certified QST (Quality Service Technician) personnel only.

WARNING! The procedures described in this manual could expose personnel to UV light, hot surfaces, and potentially lethal high voltage. You must observe all safety notices while working on the display.

How this Manual is Organized

This manual may be used online or printed on paper. For example, many hyperlinks appear with [blue underlining](#) and when clicked onscreen, display the linked section.

There are five sections in this manual.

The first three sections contain methods of diagnosing problems. The last two sections contain service and maintenance procedures, which are presented hierarchically.

Diagnosing Problems

There are three separate sections to help you diagnose problems with the display.

Troubleshooting

The [Troubleshooting](#) section contains lists of symptoms (such as “The screen is black.”) that are linked to a series of detailed questions that lead you to a solution. This is a good place to start. See *Margay Troubleshooting Procedures* on page 13.

On-screen Codes

The On-Screen codes are red and amber lights that flash in specific patterns on the screen. The pattern of flashing lights can tell you what is wrong with the display. These flashing lights are particularly helpful when the lamp won’t light. The [On-screen Code](#) section lists the codes in a visual form. You can click on any of them and go to the explanation of it. See *On-Screen Codes* on page 55.

Electronics Module LEDs

The [LEDs](#) section explains the meaning of each of the LEDs found on the electronics module. See *Electronics Module LEDs* on page 73.

Service and Maintenance Procedures

The maintenance and service procedures are divided into two sections: front service access and rear service access. If your installation permits only front access, the rear access procedures are not relevant for you.

Initially, it may seem odd to group service and maintenance procedures together, but many service procedures share initial steps with maintenance procedures.

Service Task Hierarchy

All the service tasks in this manual are hierarchical. For example, to install or remove the Video Input Module (*Task 1.2.1.1.1 Installing/Removing the Video Input Module*), you must first perform the “parent” tasks that contain it, namely:

Task 1 Opening the Screen, Task 1.2 Gain Access: Open Electronics Module Door, Task 1.2.1 Servicing the Electronics Module, and Task 1.2.1.1 Remove Electronics Module.

Task 1: Opening the Screen

Task 1.1: Gain Access: Lift Light Shield

Task 1.1.1: Change Air Filter

Task 1.1.2: Remove/Replace Lamp Ballast

Task 1.1.3: Gain Access: Remove High-Voltage Power Supply Panel

Task 1.1.3.1: Remove/Replace Intake Fan

Task 1.1.3.2: Remove/Replace Lamp Fan

Task 1.1.3.3: Remove/Replace High-Voltage Power Supply

Task 1.1.4: Gain Access: Remove DC Power Supply Panel

Task 1.1.4.1: Remove/Replace DC Power Supply

Task 1.1.4.2: Remove/Replace IR/LED Board

Task 1.1.5: Remove/Replace Lamp

Task 1.1.6: Remove/Replace Optical Engine

Task 1.2: Gain Access: Open Electronics Module Door

Task 1.2.1: Servicing the Electronics Module

Task 1.2.1.1: Remove Electronics Module

Task 1.2.1.1.1: Installing/Removing the Video Input Module

Task 1.2.1.2: Replace Electronics Module

Task 1.3: Remove/Replace Large Mirror

Task 1.4: Remove/Replace Small Mirror

Task 1.5: Cleaning the Mirrors and Lenses

Task 2: Replacing Screens

Task 3: Cleaning the Screen

After performing these “parent” tasks, you may then install or remove the VIM. See *Front-Access Maintenance and Service Procedures* on page 77.

Note: These procedures require a Clarity remote control. You may also use RS232 commands to perform these procedures, provided you know the RS232-command equivalents.

Troubleshooting Margay

General Troubleshooting Concepts and Procedures

All troubleshooting procedures require you to gather information, make assumptions, and then test those assumptions until you arrive at the problem and can solve it. Possible solutions to the most common problems are explained below. For more involved problems and solutions, see *Margay Troubleshooting Procedures* on page 13.

If your screen is black

Do This	Result	Explanation / Further Action
Step 1. On the remote, press MONITOR	A menu appears	The source is black. On the remote press SOURCE to change to different source If you know the source is not black, go to Step 2.
	No menu appears, but I see flashing lights	The lamp may not be lit. On the remote, press ON. If the screen is still black, For help interpreting the flashing on-screen lights, see <i>On-Screen Codes</i> on page 55.
	No menu appears and no flashing lights	Go to Step 4.
Step 2. On the remote, press CURTAIN.	The correct source appears	The Curtain (aka Video Mute) was on. If the correct source did not appear, go to Step 3.
Step 3. On the remote, press MONITOR twice.	The Test Patterns menu appears	Check that no test patterns are selected. If a test pattern is selected, move the selector to None and press ENTER.
Step 4. Check Power cable is connected and power rocker switch is ON	Reconnect cable or turn on unit	If none of these steps have resolved the problem, see <i>Margay Troubleshooting Procedures</i> on page 13

If your screen is a solid color, but not black

Do This	Result	Explanation / Further Action
Step 1. On the remote, press CURTAIN.	The correct source appears	If the correct source did not appear, go to Step 2.
Step 2. On the remote, press MONITOR twice.	The Test Patterns menu appears	Check that no test patterns are selected. If a test pattern is selected, move the selector to None and press ENTER. If no test pattern was selected, go to Step 3.
Step 3. Check to see if the source is a solid color.	If the source is not a solid color and none of these steps have resolved the problem, see <i>Margay Troubleshooting Procedures</i> on page 13	

Margay doesn't respond to remote control

Possible Cause	Possible Resolution
IR response disabled via RS232	Re-enable IR response using RS232 commands
Remote batteries are dead or improperly installed	Replace or reinstall batteries

Lamps won't light

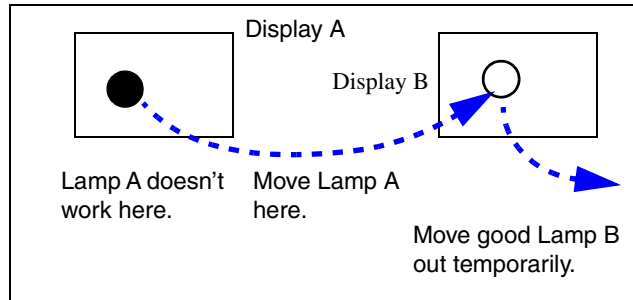
Possible Cause	Possible Resolution
Rear panel is open or light shield is up	Put the rear panel or light shield back in place and cycle the AC power off, then on
A fan has failed	Look at the LEDs on the Electronics Module for a red LED in the Fan section. <i>All</i> fans must operate for the lamps to light. See <i>Electronics Module LEDs</i> on page 73.
If the Door Open LED is amber, cycle the AC power off, then on	
To test a lamp, remove it and exchange it for a lamp you know is good from another Margay. See <i>Swapping Lamps and Ballasts</i> on page 10.	
If the "good" lamp does not work in the "bad" location, or the "bad" lamp works in another location, the problem may be a failed lamp ballast.	

Swapping Lamps and Ballasts

Some lamp and ballast problems defy diagnostics and require you to actually try other parts to determine the cause of failure.

WARNING! Always turn off the AC power and remove the power cord before working inside the display and before removing a lamp.

- If you have AC and ballast or 350V power, try swapping the lamp into a display where the lamp is good.



- If Lamp A works in Display B, put it back in Display A. Lamp A is OK.
- If Lamp A does not work in Display B, the problem is Lamp A. Put a new lamp in Display A.
- If the lamp is OK, try swapping the ballast in the same way. The lamp ballast provides power to the lamp. It is an electronic part, and all electronic parts are subject to eventual failure.
- Fan failed. All fans are sensed, which means the Electronics Module knows whether they are running or not. If they don't run when they should, the Electronics Module turns off the lamp and prevents it from striking (turning on) again.

Swapping other parts

Exchanging parts from one display to another is an effective way to find a problem. If the problem follows the part to the new unit, that part was at fault.

If the problem stays in the first unit, you haven't found the problem yet, but you have learned something: the part you moved was not the problem. Put it back in the original unit and try something else.

You can swap Electronics Modules or fans in the same way to see if one is bad.

When you swap Electronics Modules for testing, remember to put them back in their original locations. Otherwise you may have to do setup procedures again, such as Input Level adjustment and Color Balance, because these values are stored in the Electronics Module.

When you swap fans, always exchange fans of the same size.

Why not use a new part out of the box?


It may seem like a good idea to take a new part out of the box and substitute it for a suspected part in the display. However, there is a slight chance that the part in the box doesn't work.

If you test a part by putting in a known good part, you get better information.

EDID Issues

One problem with EDID is that Clarity displays are capable of many more resolutions (video timings) than can be stored in a data block of only 128 bytes. Clarity displays are capable of hundreds of resolutions, but the EDID block has room to store only dozens. This means that some video cards will not put out certain resolutions, even though the connected Clarity display is capable of handling them. If the resolution you want to use is not listed in the Clarity EDID, and the video card won't list that resolution unless it is seen in the EDID, what can you do?

A possible solution is to uncheck the Plug and Play box in the Miscellaneous menu (Main Menu > Advanced Options > Miscellaneous Options).

Miscellaneous		
<input type="checkbox"/>	Beeper	
	Curtain Pattern	Logo
<input checked="" type="checkbox"/>	Auto Codes	
<input type="checkbox"/>	Plug and Play (EDID Enable)	
<input type="checkbox"/>	Inverted Installation	
	Preferred Source Detection	16 x 9
	HD Interlaced Content Motion	Normal

After you have unchecked Plug and Play (EDID Enabled), reboot the source computer.

Note: If you use a long-line distribution system, EDID may not function correctly or at all.

Margay Troubleshooting Procedures

Click on the symptom of the problem or turn to the corresponding page number.

- 1 The screen is black. Go to page 14.
- 2 The screen is a solid color, but not black. Go to page 20.
- 3 The lamp will light, but it won't stay on. Go to page 22.
- 4 The picture is visible, but there is something wrong with it. Go to page 23.
- 5 RS232 or RS485 communication doesn't work. Go to page 38.
- 6 The Margay doesn't respond to the remote control. Go to page 47.
- 7 Opening the rear panel does *not* shut off the lamp. Go to page 52.
- 8 Opening the light shield does *not* shut off the lamp. Go to page 52.
- 9 The screens don't fit together well. Go to page 53.
- 10 There is dirt or smudges in the picture. Go to page 54.

Screen is black

Possible cause: Lamp is off

What to do: First, determine whether the lamp is really off.

From about 6 feet (2 m) away, aim the remote at the Margay screen and press the MONITOR button



Do you see Red or Amber lights flashing on the screen?

Yes I see a red or an amber light, or both, flashing on the screen. Go to page 15.

Yes I see an amber light, but it is steady, not flashing. Go to page 72.

No I do not see any lights on the screen, and there is no menu. Go to page 16.

[Back to the Troubleshooting List on page 13.](#)

Red or amber lights flashing on the screen

Possible cause: You don't know the cause yet. Keep reading.

What to do: Notice the pattern of the lights—red, red, amber or whatever it is.

Go to “Margay On-screen Code Details and Actions to Take” on page 58 to help you decode the message.

[Back to the previous question](#)

[Back to the Troubleshooting List on page 13.](#)

Screen is black

and ***no*** red or amber lights are flashing on the screen

Possible cause: Power failure

What to do: Open the screen (*Task 1 Opening the Screen* on page 78) and the electronics module door (*Task 1.2 Gain Access: Open Electronics Module Door* on page 111). Or look at the Electronics Module from the rear.



Are any of the LEDs on the Electronics Module lit?

Yes some of the LEDs are either red or green. Go to page 17.

No none of the LEDs are lit. They are all off. Go to page 18.

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Screen is black

and no red or amber lights are flashing on the screen
and some LEDs are lit on the Electronics Module.

Discussion: If some of the LEDs are lit on the Electronics Module, it usually means that the module is working. At least it has power.

The On-Screen Codes (red or amber lights on the screen) should be working also. But you got to this point because the On-Screen Codes weren't flashing.

Possible cause: On-Screen Code board covered, failed, or disconnected.

What to do: This board is under the DC Power Supply & IR board cover. To inspect it, check cable connections, or replace it, see *Task 1.1.4 Gain Access: Remove DC Power Supply Panel* on page 95 and *Task 1.1.4.2 Remove/Replace IR/LED Board* on page 99. If you have rear access, see *Task 4.3.5 Gain Access: Remove/Replace DC Power Supply Panel* on page 154 and *Task 4.3.5.2 Remove/Replace IR/LED Board* on page 158.

Possible cause: The light shield is raised.

What to do: When the light shield is raised, it can block the flashing On-Screen Code lights. However, when it is raised, the lamp will not light, because the interlock switch is open. To lower the light shield, see *Task 1.1 Gain Access: Lift Light Shield* on page 82 or *Task 4.3 Gain Access to interior of unit* on page 140.

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Screen is black

and no red or amber lights are flashing on the screen
and no LEDs on the Electronics Module are lit.

Possible cause: AC power is missing

What to do: Check the main power switch just below the Electronics Module. Is it lit?

No Then there is no AC power to the Margay.
Turn on the AC switch.

If the switch did not light, check the power cord.

Check the AC outlet where the power cord is plugged in.

Check the fuse on the display: see *Task 1 Opening the Screen* on page 78, *Task 1.1 Gain Access: Lift Light Shield* on page 82, *Task 1.1.3 Gain Access: Remove High-Voltage Power Supply Panel* on page 89, and *Task 1.1.3.3 Remove/Replace AC Fuse* on page 92.

If you have rear access, see *Task 4 Gain Access: Remove Rear Panel* on page 130, *Task 4.3 Gain Access to interior of unit* on page 140, *Task 4.3.4 Gain Access: Remove High-Voltage Power Supply Panel* on page 148, and *Task 4.3.4.3 Remove/Replace AC Fuse* on page 151.

If the Input AC fuse (F1 on the High-Voltage Power Supply) fails, no power goes into the unit; you may need to replace the High-Voltage Power Supply itself.

If the Output AC fuse (F2 on the High-Voltage Power Supply) fails, the Electronics Module will still receive power, but the lamps won't light because no power is going to the ballast. Also if the Output fuse blows, the problem might be the ballast and you may need to replace the ballast. Test this by swapping a good ballast.

Check the AC power switch on the display with a voltmeter.

If the switch needs to be replaced, see *Task 1 Opening the Screen* on page 78, *Task 1.2 Gain Access: Open Electronics Module Door* on page 111, *Task 1.1.4 Gain Access: Remove DC Power Supply Panel* on page 95, and *Task 1.1.4.3 Remove/Replace AC Power Switch* on page 100.

If you have rear access, see *Task 4 Gain Access: Remove Rear Panel* on page 130, *Task 4.3 Gain Access to interior of unit* on page 140, *Task 4.3.5 Gain Access: Remove/Replace DC Power Supply Panel* on page 154, and *Task 4.3.5.3 Remove/Replace AC Power Switch* on page 159.

You can't solve any other problems until the AC switch is lit.

Yes Then the Margay has AC power.

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Screen is black

and no red or amber lights are flashing on the screen
and no LEDs on the Electronics Module are lit
and AC power switch is lit.

Possible cause: Low-voltage power supply failed or not connected

What to do: Check that all the connectors on the low-voltage power supply are secure.
Swap this LV power supply with a known good one from another Margay.

To remove and replace the DC Power Supply from the front of the display, see *Task 1.1.4 Gain Access: Remove DC Power Supply Panel* on page 95, *Task 1.1.4.1 Remove/Replace DC Power Supply* on page 97.

If you have rear access, see *Task 4.3.5 Gain Access: Remove/Replace DC Power Supply Panel* on page 154, and *Task 4.3.5.1 Remove/Replace DC Power Supply* on page 155.

Possible cause: Electronics module not connected to the LV power supply.

What to do: Check connectors on the bottom of the Electronics Module.
For information about Electronics Module cable connections, see *Task 1.2 Gain Access: Open Electronics Module Door* on page 111 and *Task 1.2.1 Servicing the Electronics Module* on page 112. To inspect cable connections from the rear, see *Task 5 Remove Electronics Module* on page 161.

Possible cause: Electronics module failed.

What to do: Swap this Electronics Module with a known good Electronics Module from another Margay. If *this* Margay now works but the other one doesn't, the problem was the Electronics Module. Order a new one.

To remove and replace the Electronics Module from the front, see *Task 1.2 Gain Access: Open Electronics Module Door* on page 111 and *Task 1.2.1 Servicing the Electronics Module* on page 112.

To remove and replace the Electronics Module from the rear, see *Task 5 Remove Electronics Module* on page 161.

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Screen is solid color, but not black

- Discussion:

You know the lamps are lit. The screen is a solid color for one of these reasons.
- Possible cause:

There is a test pattern active.
- What to do:

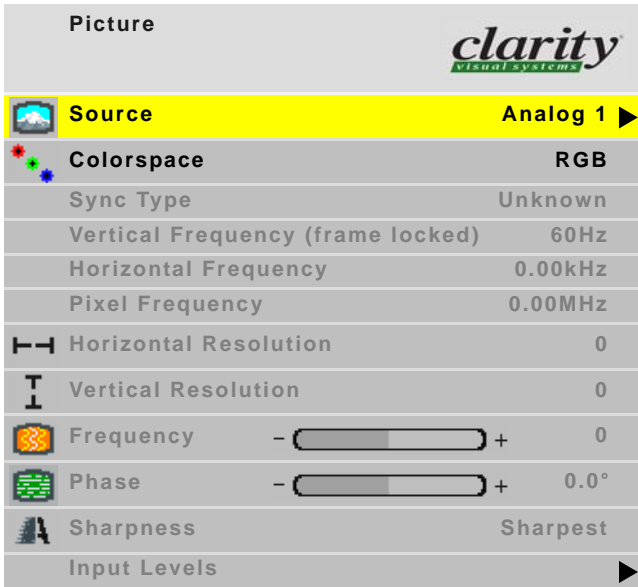
Open the Test Pattern menu. (MENU > DIAGNOSTICS > TEST PATTERNS) Select None and press ENTER.



- Possible cause:

No source, which means the Curtain (aka Video Mute) is on, and the Curtain is set to the solid color you see.
- What to do:

Check the Picture menu. (With no menus showing, press MENU. Select Picture and press ENTER.



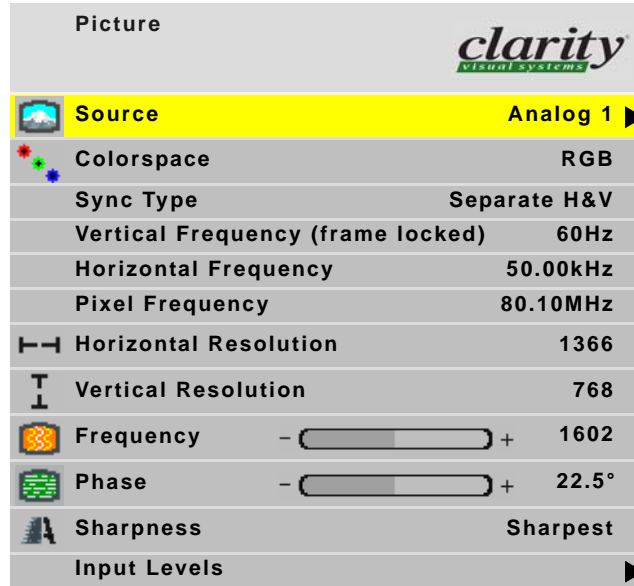
If the Sync Type is Unknown, either there is no source picture, or the source picture is a type that the Margay can't display. Check the source.

Possible cause: Curtain has been turned on manually, and it is set to a solid color.

What to do: Press the CURTAIN button on the remote. If the color does not go away, press it again to turn Curtain off.

Possible cause: The source itself is producing the solid color.

What to do: The problem is not in the Margay. Look at the source.



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Lamp lights, but will not stay lit

Possible cause: The lamp can no longer maintain an arc between its electrodes.

What to do: Replace the lamp with a known good lamp, one from another Margay that works.
To service lamps from the front, see *Task 1.1.5 Remove/Replace Lamp* on page 102. To service lamps from the rear, see *Task 4.1 Remove/Replace Lamp* on page 131.

Discussion: This is a relatively easy test to make.

Possible cause: If the lamp was good, check the ballast.

What to do: Replace the lamp ballast with a known good ballast, one from another Margay that works.
To service the ballast from the front, see *Task 1.1.2 Remove/Replace Lamp Ballast* on page 84.
To service the ballast from the rear, see *Task 4.2 Remove/Replace Lamp Ballast* on page 135.

Discussion: This is a little more difficult, but still relatively easy.

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Picture is visible, but

- a** ... it is flipped. Go to page 24.
- b** ... it has a black edge. Go to page 25.
- c** ... it has a colored edge. Go to page 28.
- d** ... it is too small. Go to page 29.
- e** ... it is too large; the edges are cut off. Go to page 29.
- f** ... it is noisy. Go to page 30.
- g** ... it has horizontal streaks or noise. Go to page 31.
- h** ... it has vertical streaks. Go to page 32.
- i** ... the colors are wrong. Go to page 33.


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Picture is flipped

Possible cause: Image is flipped in Miscellaneous menu.

What to do: Check or uncheck the Inverted Installation box. It should be checked only if the Margay is installed upside down.

MENU > ADVANCED OPTIONS > MISCELLANEOUS

Miscellaneous		
<input type="checkbox"/>	Beeper	
	Curtain Pattern	Logo
<input checked="" type="checkbox"/>	Auto Codes	
<input checked="" type="checkbox"/>	Plug and Play (EDID Enable)	
<input checked="" type="checkbox"/>	Inverted Installation	
	Preferred Source Detection	16 x 9
	HD Interlaced Content Motion	Normal

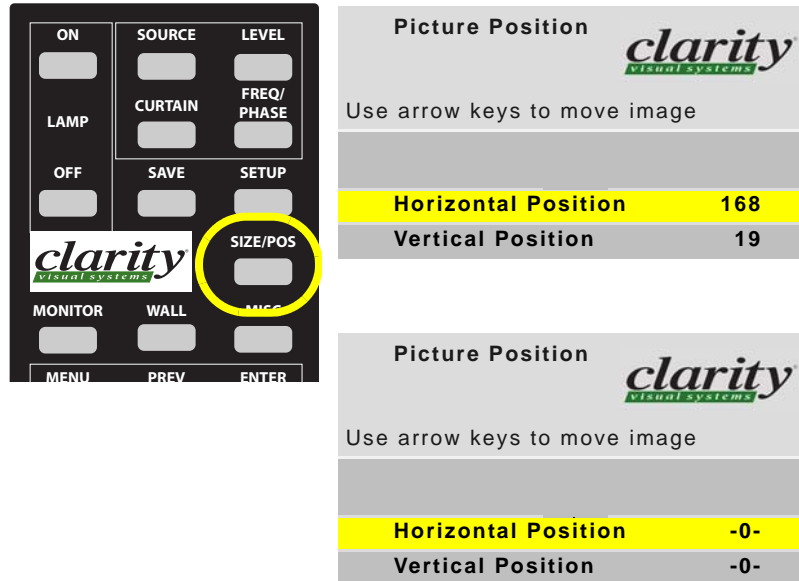
[Back to the "Picture is visible" list](#)

[Back to the Troubleshooting List on page 13.](#)

Picture has a black edge

Possible cause: Picture is not positioned correctly.

What to do: Use the Position control. On the remote, press SIZE/POS



Note: If both positions are at zero, the image is DVI and cannot be adjusted.

Using the Up and Down arrow keys, move the selector to Horizontal or Vertical Position. Use the Left and Right arrows to move the image.

Did that move the black edge?

Yes Go to page 23.

No Go to page 26.

[Back to the "Picture is visible" list on page 23](#)

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Picture has black edge
and Position control does not help.

Possible cause: The optical engine is not aligned properly

Discussion: If you move the picture toward the black edge with the Picture Position menu, and the picture just disappears into the black edge, this indicates that the optical engine is definitely not aligned properly. The image from the optical engine is not aimed at the screen.

What to do: Open the Engine Alignment menu and move the engine. The User Guide has a complete description of this process in the section called “Adjusting Margay’s Engine: Important Step.”

Main Menu



Picture

Size & Position

Aspect Ratio & Wall


Memory

Diagnostics

Advanced Options

Program Information

Advanced Options



Color Balance

Miscellaneous Options

Lamp Settings

Serial Port Settings


Auto Setup Options

Engine Alignment

Menu Options

Message in Picture

Engine Alignment



Left Side

Right Side

Horizontal

Image Size

Test Pattern

Off

Use the Grid test pattern.

The four movement controls interact with each other a little. Be patient.

Were you able to fix it with the Engine Alignment controls?

- Yes Go to page 23.
- No Go to page 27.

[Back to the previous question](#)

[Back to the "Picture is visible" list](#)

[Back to the Troubleshooting List on page 13.](#)

Picture has black edge

and the adjustments in the Engine Alignment menu does not move the image far enough

Possible cause: The range of the engine alignment motors does not allow sufficient adjustment.

What to do: You will have to remove the Margay's optical engine, and manually adjust the engine carrier slightly.

First, use the Engine Alignment menu to put all the motors in the center of their travel.

Then, see the processes explained in *Task 4.3.1 Adjusting the Optical Engine On Its Carrier* on page 141.

[Back to the previous question](#)

[Back to the "Picture is visible" list](#)

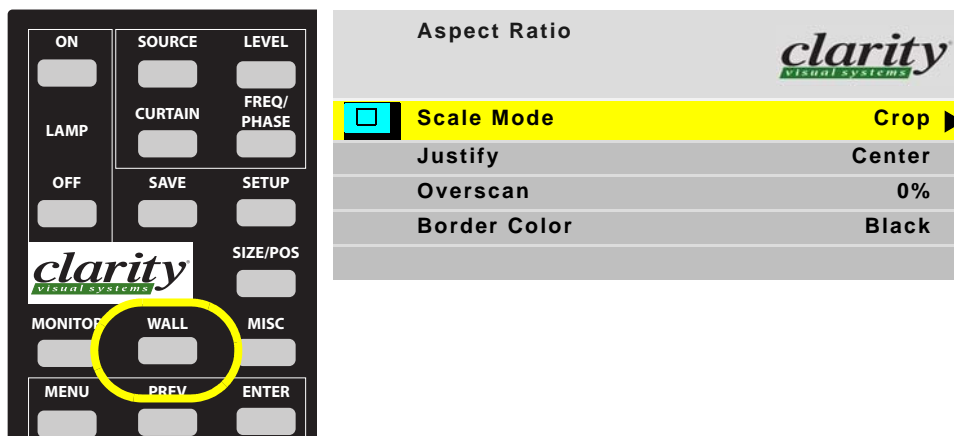
[Back to the Troubleshooting List on page 13.](#)

Picture has a colored edge

Possible cause: The picture is not the same aspect ratio as the wall or the unit. The edge color is determined by the Border Color in this menu.

What to do: Check the Wall & Aspect Ratio menu.

On the Remote, press WALL.



Discussion: If the aspect ratio of the source picture is not the same as the aspect ratio of the display or of the entire wall (when using Big Picture), then either:

- a** some edge of the picture will be cropped (chopped off)
- b** the extra area *not* filled with picture will be filled with a background color

Possible cause: The source itself has a colored edge.

What to do: Check the source picture.

[Back to the "Picture is visible" list](#)

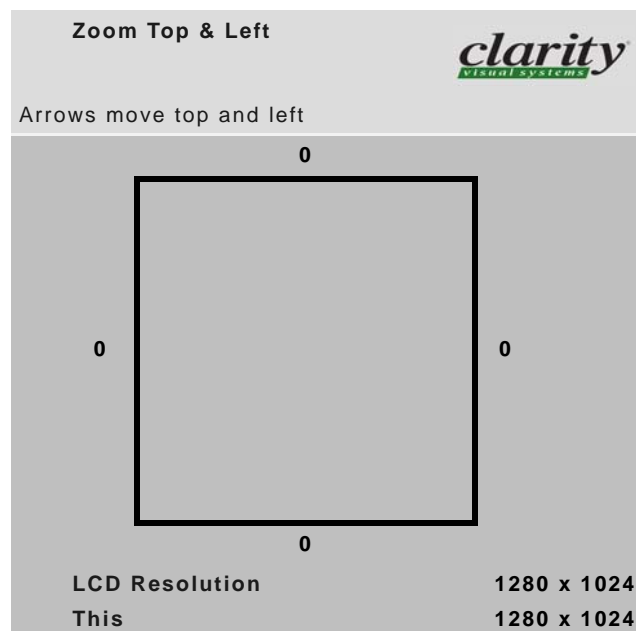
[Back to the Troubleshooting List on page 13.](#)

Picture is too large or too small

Possible cause: This could be a zoom adjustment, particularly if you are using Clarity's Big Picture™.

What to do: Check the two Zoom menus and set them both so you see a zero on all four sides. Then check the two Viewport menus and see that they read zero on all four sides.

Main Menu		Size & Position	
Picture	▶	Picture Position	▶
Size & Position	▶	Zoom Window Top & Left	▶
Aspect Ratio & Wall	▶	Zoom Window Bottom & Right	▶
Memory	▶	Viewport Window Top & Left	▶
Diagnostics	▶	Viewport Window Bottom & Right	▶
Advanced Options	▶	Reset All Windows to Default	
Program Information	▶		



[Back to the "Picture is visible" list](#)

[Back to the Troubleshooting List on page 13.](#)

Picture is noisy

Possible cause: Loop-thru is too long

Discussion: Analog loop-thru is sometimes good for as many as 9 displays. Digital (DVI) loop-thru is good for 5 or 6. Beyond that, and sometimes even earlier, you may find noisy pictures.

What to do: Reduce the number of Margays the picture must go through to get to the last one. One way is to use a distribution amplifier or switch box so that each display, or at least most of them, can be fed directly.

Another way is to combine analog and digital loop-thru. For instance, in a 4x4 wall, loop the analog picture vertically through the first column. Then loop the picture out of these along each row digitally. That way the furthest display is only the 7th in the chain, not the 16th.

Possible cause: Long cables from the picture source to the first display.

What to do: Use highest quality VGA or digital cables. Put an amplifier in the line.

Possible cause: Poorly adjusted Phase. This is most easily seen in vertical lines or in text (black text on white background), or in anything that has fine detail and high contrast.

What to do: Readjust the Phase control.

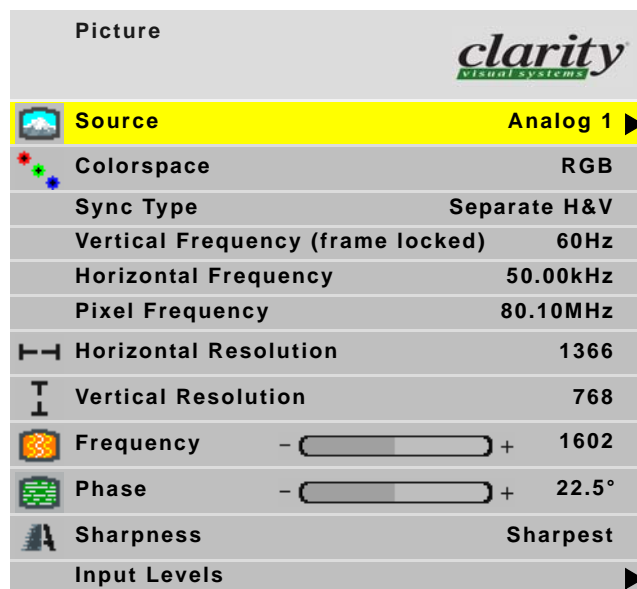
[Back to the "Picture is visible" list](#)

[Back to the Troubleshooting List on page 13.](#)

Analog data (Analog 1 or Analog 2) picture has horizontal streaks or noise

Possible cause: Poorly adjusted Phase. This is most easily seen in vertical lines or in text (black text on white background), or in anything that has fine detail and high contrast.

What to do: Adjust the Phase control in the Picture menu.



- a** If possible, use a checkerboard pattern from the picture source.
- b** If the source is a computer, use Windows™ Paint program
- c** Set Image > Attributes to Black and white and set the resolution to the native resolution of the Margay (1280x720).
- d** Then choose the ninth (9th) color chip from the left on the bottom row of “color” chips (they all look white or gray or black).
- e** Choose the paint bucket and dump this pattern in the Paint window.
- f** Now look for horizontal streaks in the picture on the Margay. Adjust Phase until those streaks disappear.

If there are vertical bands in the picture, it is a [Frequency problem](#). Go to page 32.

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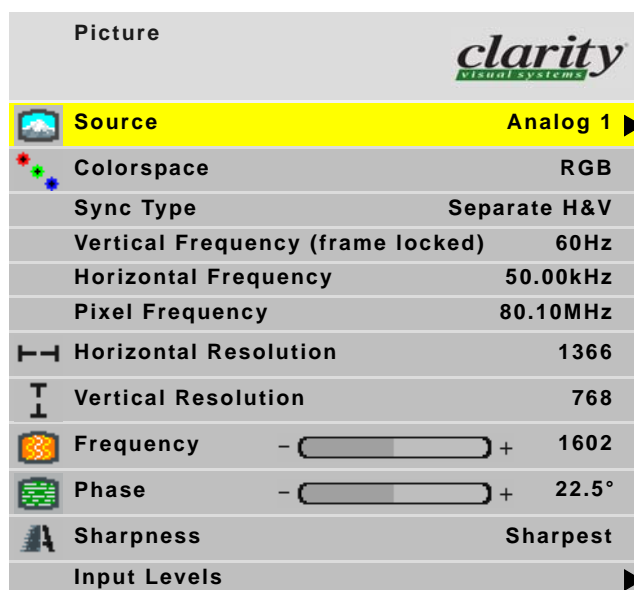
[Back to the Troubleshooting List on page 13.](#)

Analog data (Analog 1 or Analog 2) picture has vertical streaks

Possible cause: Poorly adjusted Frequency.

Discussion: This is most easily seen in vertical lines or in text (black text on white background), or in anything that has fine detail and high contrast. In text, some of the letters will appear washed out while nearby text will appear to be bold.

What to do: Readjust the Frequency control. A checkerboard pattern will highlight the problem and make the adjustment easier to see.



- Use an ANSI checkerboard pattern (1 pixel on, one pixel off) from the picture source.
- If the source is a computer, use Windows™ Paint program
- Set Image > Attributes to Black and white and set the resolution to the native resolution of the Margay (1280x720).
- Then choose the ninth (9th) color chip from the left on the bottom row of “color” chips (they all look white or gray or black).
- Choose the paint bucket and dump this pattern in the Paint window.

If there are horizontal streaks, it is [Phase problem](#). Go to page 31.

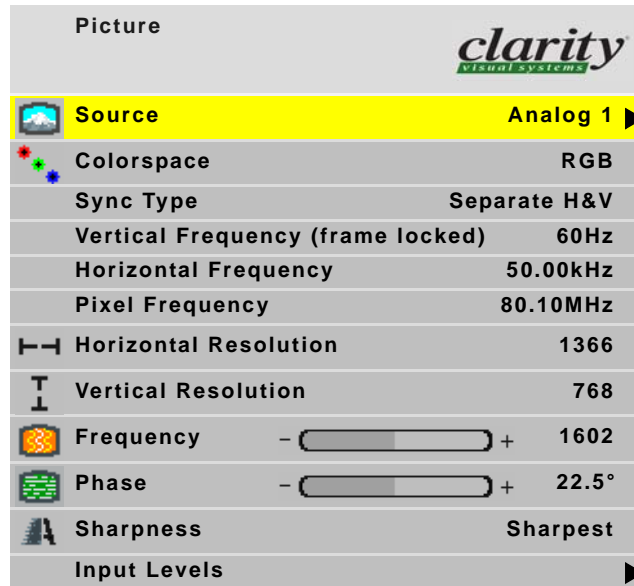
[Back to the "Picture is visible" list](#)

[Back to the Troubleshooting List on page 13.](#)

Analog data (Analog 1 or Analog 2) picture colors are wrong

Possible cause: Colorspace is wrong.

What to do: Change to the correct colorspace. Open the Picture menu (Main > Picture) and change the Colorspace setting.



Possible cause: If the input source is analog, adjust the following:

[Input Levels](#) and [Color Balance](#).

Discussion: If **INPUT LEVELS** are wrong, with picture may appear washed out with weak colors and not “snap” to the blacks and whites. Or it may appear too contrasty, where many dark colors are compressed into black and many very light parts are all white.

If the **COLOR BALANCE** is wrong, the colors or brightness of displays in a Margay wall may be differ from one to another display.

What to do: To adjust Input Levels for *analog* sources, you need a black picture and a white picture from the source computer.

- a Show a black picture from the source. *This must come from the computer source that will be used for the program.* It does no good to use your laptop for this adjustment, then connect to a different computer for the program. Nor can you use the Margay’s black test pattern (Hint: Make a black screen from Windows Paint program, Run > mspaint) or use Desktop Properties.

- b** In the **MANUAL LEVELS** menu, select **AUTO BLACK LEVEL** and press ENTER.

Input Levels		<i>clarity</i> visual systems	
	Auto Black Level (offset)		
	Auto White Level (gain)		
	Center Point	64	124 99
	Black Level (offset)-All	-	+ 79
	Red	-	+ 89
	Green	-	+ 67
	Blue	-	+ 83
	White Level (gain) -All	-	+ 99
	Red	-	+ 99
	Green	-	+ 99
	Blue	-	+ 99

- c** Show a white picture from the source.
- d** Select **AUTO WHITE LEVEL** and press ENTER.

The Margay is now adjusted to the black and white levels of *this* computer using *this* video card. If you change computers or video output cards in the computer, you must do this again.

Adjusting **Color Balance** is a somewhat complicated procedure. See the section “Adjusting Color Balance” in the Margay User Guide.

Discussion: **Color balancing** makes all the displays in a wall have the same colors. It does not achieve a particular hue or shade of white. When all the displays look the same for brightness and hue, the wall will look uniform, and viewers will focus their attention on the content. Color balancing is an art; you will get better at it with practice. In this art, you must try to separate your perception of brightness, values, and hue. Hue is the apparent color.

By the way, are you color blind? If you are color blind even a little bit, do not perform this procedure.

- e** Turn on lamps one hour prior to performing Color Balancing.
If you are working with a multi-lamp Clarity product, go to the Lamp Control menu and see that all displays have the same number of lamps on. It is strongly recommended that you use all lamps, even if you plan to leave some lamps off during normal operation.
- f** Turn off White Boost on all displays to make Color Balancing much easier.
- g** Open the Color Balance menu on all the displays.
- h** Set all displays to have the same settings for Gamma.
- i** Set all displays to default levels.

- j** Click Reset on all displays so they show 100 for the White red, green, and blue, and 7 for the Grays.

Initial White adjustment for brightness

- k** In the Test Pattern section of the Color Balance menu, choose the White pattern for all displays.
- l** If there is a Hide Menu item in the Color Balance menu, you may wish to hide the menus so you won't be distracted by the extra colors or adjust the wrong display.
- m** If the wall is wide, move around so you look at all the displays on axis. Evaluate the white screens. Look for the brightest display in the wall.
Try to ignore color when choosing the brightest display, except: Your eye and brain will interpret a bright bluish display to be brighter than a bright display that does not have a blue hue to it. If one display is bright and particularly blue, don't choose it as the brightest.
- n** Turn on the Color Balance menu again in the display you chose as the brightest by pressing the ENTER button.
- o** Use Adjust All in the White section of the Color Balance menu to bring down the brightest display to the same level as the less bright ones, but do not take it down more than 5 or 6 steps. If it is still too bright, leave it for now.
Don't try to match the brightness exactly, just get it closer. A better match will come later. As you adjust the brightness of White downward, the hue may change. Try to ignore the color and adjust for brightness only.
- p** If other displays are brighter, bring them down also. Again, do not adjust more than 5 or 6 steps.

Initial White adjustment for hue

Now step back and turn your attention to hue only. For the darker displays, the ones that are still at 100 for red, green and blue, you will subtract colors to make them match the brighter displays in hue.

In your mind, or on a "map" of the wall for large walls, mark the displays that are too green, too red, too blue. If a display is too yellow, it is really has too much green and red, because green and red light sources mix to make yellow.

- q** Start with displays that need green subtracted. Reduce the green in these displays until they are closer in hue to the brighter displays.
- r** Look for the displays that need red subtracted, and do these.
- s** Finally, reduce the blue in any displays that need taken down. Move the blue as little as possible. Try not to move the blue more than 10 or 15 steps.

Second White adjustment for brightness

- t** Reduce White All for the brightest displays to match more closely the other displays for brightness.
- u** Repeat Steps **q** through **s** as needed.

Adjusting the Grays

- v** In the Color Balance menu, turn on either the Gray or the Gray Scale test pattern. The Gray Scale is the preferred test pattern.
- w** Choose a display that has very little hue in its gray and call this the baseline. Adjust the brightness and hue of the other displays to this one.

In the grays, your starting value is 7 and you can go up to 15 and down to 0. A good method is to change the three colors (always under Gray) back and forth rapidly, stopping when they match. DO NOT evaluate the grays by looking at the primary colors in the Test Pattern menu.

If you took blue out of a display when looking at a white screen, and you want to add blue when looking at the gray screen of this same display, you should re-evaluate the white screens again.

Optional: Checking your results

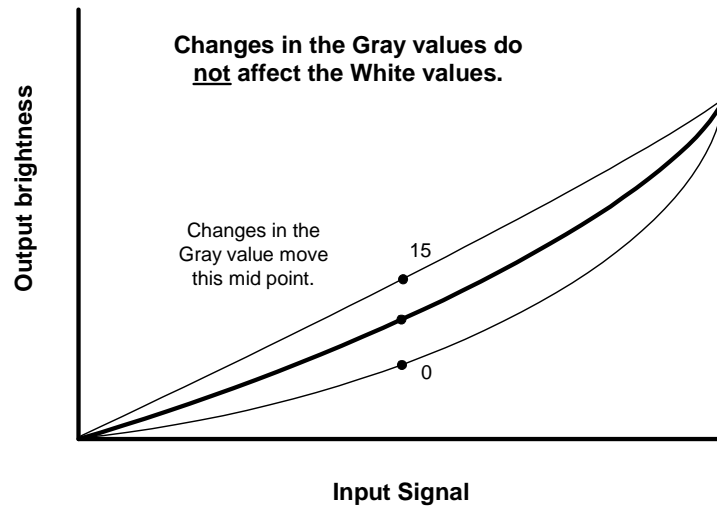
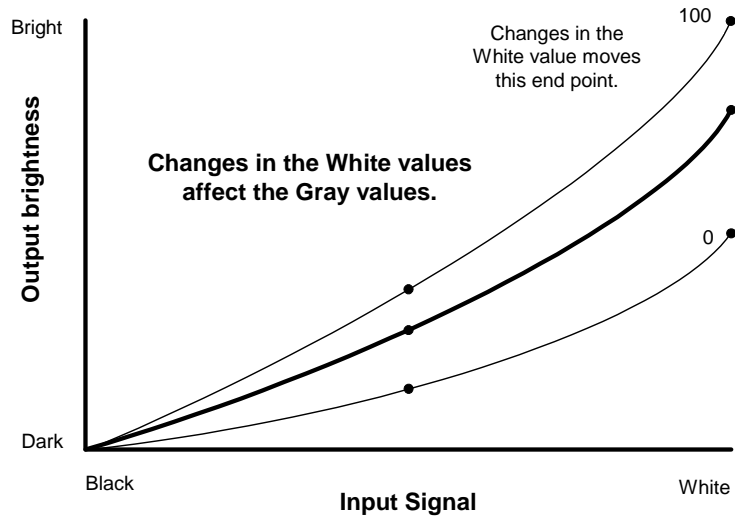
Discussion: When checking the saturated colors, you are not looking for a “perfect” red or green or blue. You want to see if they have the same brightness.

- x** Go to the Test Pattern menu and turn on the Green pattern on all displays. See how they match.
- y** Turn on the Red pattern on all displays and check them.
- z** Finally, check the displays with the Blue pattern up on all of them.
- aa** If the full field, saturated colors do not match each other, you may open the Color Balance menu for those displays and adjust that color in the White area. For example, if you the blue test patterns need adjustment, use the Blue adjustment in the White section of the Color Balance menu.

Do not adjust the Grays at this time. Adjusting Gray values does not affect the full field test patterns, and you will just throw everything off.

You should only have to adjust a step or two here. If things are off more than that, go back to Step 1 and start over.
- ab** If you make any adjustment in the step above, you should look at the Grays again. Changing any white level affects may affect the gray level, but changing the gray does not affect the white.

- ac** Remember to turn off the test pattern in all displays and close all menus. If you close the Color Balance menu, the test pattern will turn off.



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RS232 or RS485 communication doesn't work


There are many small details involved in getting an entire wall or group of units to communicate over a serial link. By starting with simple commands you can ensure all these details are in place before moving on to more complex control. If you are setting up a wall or group of units for the first time, follow these steps for easy setup. If you have problems later, you can refer to the troubleshooting flowcharts starting on page 41 and the diagnostic steps starting on page 44 as necessary.

Setup

- 1 Connect the RS-232 cable from the computer to the RS-232 in connector of one unit. Connect the RS-232 out connector of that unit, to the RS-232 in connector of the next unit and so on until all units are connected.
- 2 Choose a unique combination of group and unit id for each unit and, using the remote control, specify it in the Serial Port Settings menu.

Main Menu	
	
Picture	▶
Size & Position	▶
Aspect Ratio & Wall	▶
Memory	▶
Diagnostics	▶
Advanced Options	▶
Program Information	▶

Advanced Options	
	
Color Balance	▶
Miscellaneous Options	▶
Lamp Settings	▶
Serial Port Settings	▶
Auto Setup Options	▶
Engine Alignment	▶
Menu Options	▶
Message in Picture	▶

Serial Port Settings	
	
Group ID	1
Unit ID	1
ASCII Response Type	Symbolic
ASCII Response Terminator	CR
Baud Rate	19200
<input type="checkbox"/> Terminate RS485	

- 3 Set the baud rate of the host computer to 19200. If this is not possible, set the baud rate of each unit to match the baud rate of the host.

- 4 Open a program on the host that allows you to easily type commands. Serial Talk, available from our website, is one such program. Be sure you know how to send a carriage return character with whatever program you are using. All commands to the units must end in a carriage return (noted as [CR] in the examples below). The rest of this document will use Serial Talk syntax in the examples.

Global command

- 5 Send the command `op ** pattern=red [CR]`
- 6 Did all units in the wall put up a red test pattern?
 - a If yes, go on to send individual commands.
 - b If none of the units responded, go to Global command to first unit on page 41.
 - c If the first unit went red, but one or more of the others didn't, go to Global command to subsequent units on page 42

Individual command

- 7 For each unit in the wall, send the command `op 00 pattern=blue [CR]`, substituting each unit's id in turn.
- 8 Did each unit turn blue when commanded?
 - a If not, check each unit's unit and group ID.
- 9 Did you receive an echoed response back each time?-
 - a If not, go to Response from individual units on page 43.

Data query

- 10 Send a command which asks for information to each unit in turn. For example, `op 00 select.source? [CR]`
- 11 Did each unit return its currently selected source?
 - a If not, go to Response from individual units on page 43.

Useful commands for RS232 troubleshooting

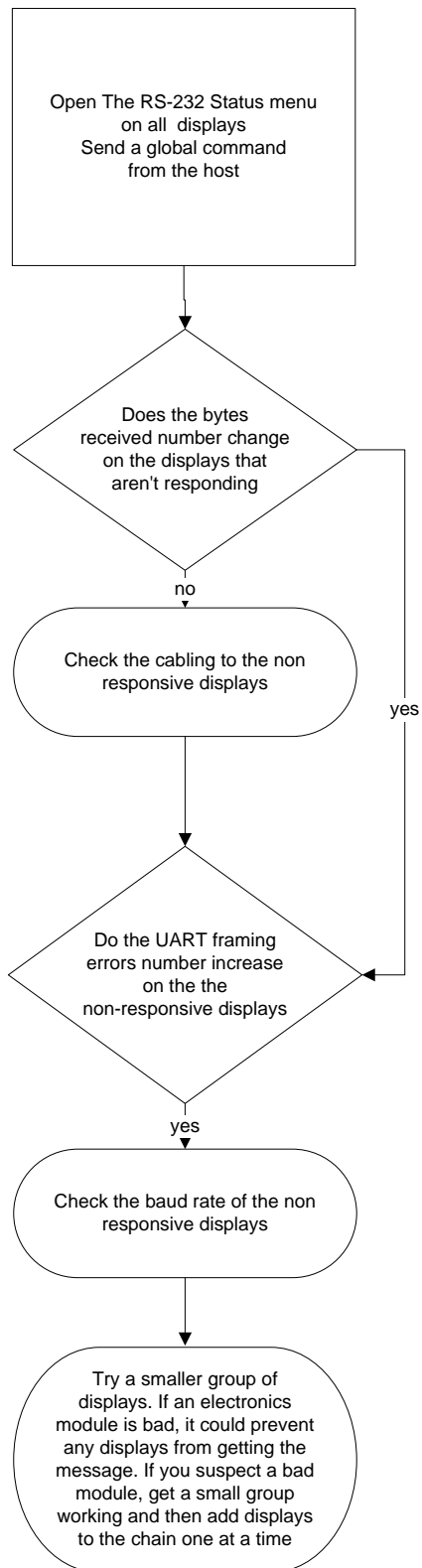
If you are trying to send a particular command and are having trouble, first make sure you have established the wiring and settings are correct by using the simple commands suggested above. After you have established that, the problem is probably in the command itself.

If a unit doesn't respond to a particular command, look at the "Commands Received" number. If it doesn't increase by one, the unit didn't understand the command. Double check the spelling and syntax. Be sure to start operations with `op` or `OP`, not `oP` or `Op`. Be sure to end with a [CR].

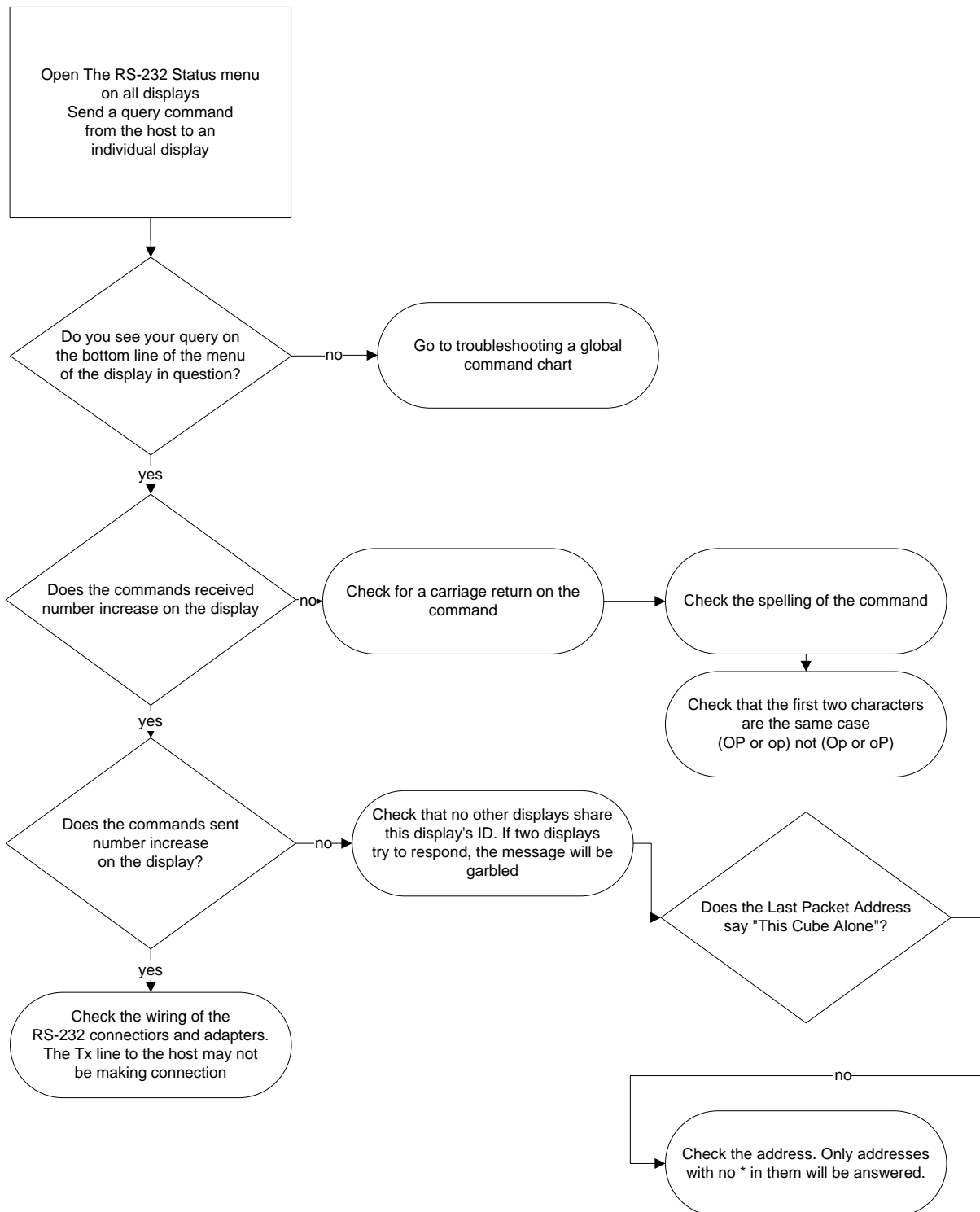
If the Commands Received increases but the unit didn't respond, it may be in a state where it cannot respond at this time, or it may have invalid data. Try sending the command with an individual (not global) address, and watch the response. If it sends a `NAK`, it wasn't able to carry out the command. For example, you can't change the brightness unless you have a valid source. It will also send a `NAK` if the data is out of range. For example, you can't set the brightness to 1000. If it sends an `ERR`, it didn't understand the command. Perhaps it is spelled wrong, or you are trying a command that is not valid on this product (such as an audio command on a Bobcat X).

Global command to first unit

Global command to subsequent units



Response from individual units




RS232 diagnostic troubleshooting


Discussion: Look at the [LEDs](#) on the Electronics Module. The LED named SERIAL DATA should light every time *any valid* command is received. Check this LED in the first Margay in the series. It should light briefly (80ms) whenever a command is received.


Possible cause: Wrong baud rate

Discussion: The baud rate of the Margay and the baud rate of the computer (or whatever is sending the RS232 commands, must be the same.

What to do: Check the current baud rate of the Margay.

Main Menu 	
Picture	▶
Size & Position	▶
Aspect Ratio & Wall	▶
Memory	▶
Diagnostics	▶
Advanced Options	▶
Program Information	▶

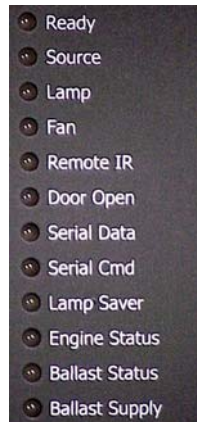
Advanced Options 	
Color Balance	▶
Miscellaneous Options	▶
Lamp Settings	▶
Serial Port Settings	▶
Auto Setup Options	▶
Engine Alignment	▶
Menu Options	▶
Message in Picture	▶

Serial Port Settings 	
Group ID	1
Unit ID	1
ASCII Response Type	Symbolic
ASCII Response Terminator	CR
Baud Rate	19200
<input type="checkbox"/> Terminate RS485	

The baud rate in the Serial Port Settings menus must be the same as the baud rate of the computer.

Possible cause: Wrong address

What to do: Check the LEDs on the Electronics Module as you send a command. If the command is valid, the Serial Data LED will light briefly (80ms). If the command was addressed to *this display*, or a group that includes this display, the Serial Cmd LED will also light.



Discussion: For more information about forming commands and a complete command list, download RS232 Control for Margay from the Clarity Visual website. For more information, see *Accessing Clarity's Customer Support Website* on page 171.

Possible cause: Wrong com port


What to do: Check the com port setting of the computer. Usually #1 is correct.

Possible cause: Incorrectly wired adapter.

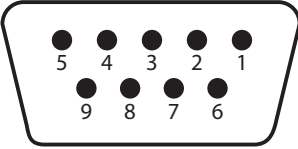
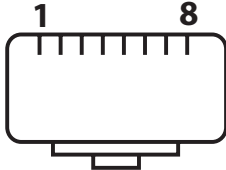
To go from a computer's 9-pin serial out connector or a conventional automation system's serial port to the RJ45 connector of the RS232 In on the Margay, you will need an adapter.

Wiring the adapter

To go from 9-pin D-sub serial connector on the back of the computer to an RJ45 connector, use a standard RJ45-to-9-pin adapter. Wire it internally as shown. The wiring shown for this adapter is correct for *straight-through* cables. Straight-through cables are wired 1-to-1, 2-to-2, etc.



Yellow wire	pin 3
Black wire	pin 2
Green wire	pin 5
RJ45	9-pin
6	3
5	5

RJ45 looking into the socket

What to do: These adapters are available at electronics stores. They come with the wires *not* connected to the 9-pin connector. Wire it as shown in this diagram.

Possible cause: Wrong serial connector on the Margay

What to do: Be sure the output of the computer goes to the RS232 IN connector of the first Margay in the series.

Discussion: Most computers have RS232 serial outputs but not RS485 out. In the Margay, the serial data goes into the first unit in the series to the RS232 IN connector. From there it loops out the RS485 OUT to the next Margay's RS485 IN.

Possible cause: Wrong Cat-5 cable type

What to do: Check that the cable is *straight thru*. Hold up both ends of the cable with the connectors side-by-side and pointing away from you. You should see the same colors, left-to-right, on both connectors. It is best if the Cat-5 cable uses twisted pairs of wires rather than flat, parallel wires, especially for long distances.

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Margay doesn't respond to remote control

Possible cause: Dead batteries or batteries in wrong

What to do: First, see that the batteries are in correctly. Then try new batteries. Or try a different remote.

Possible cause: The remote has been disabled by an RS232 command

What to do: Re-enable IR remote control of the unit.

Discussion: For more information about forming commands and a complete command list, download RS232 Control for Margay from the Clarity Visual website. For more information, see *Accessing Clarity's Customer Support Website* on page 171.

Possible cause: Remote is aimed wrong

What to do: Try controlling a different Margay. Did the remote work on a different unit?

Yes Go to page 48.

No Go to page 51.

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Margay doesn't respond to remote control

and the remote control can control other Margays.

Discussion: You know the remote control works, because it can control a different Margay.

Possible cause: Remote is aimed wrong or too close

What to do: Step back at about 10 feet (3m) from the Margay and aim the remote at the middle of the screen. at a slight upward angle so that the IR beam hits the main mirror squarely.

Discussion: The IR beam (infra-red, which you can't see) should go through the screen, bounce off the large mirror, and reflect down into the IR receiver. The receiver can be seen through a hole in the LV Power Supply & IR board cover.



Possible cause: Light shield is lifted

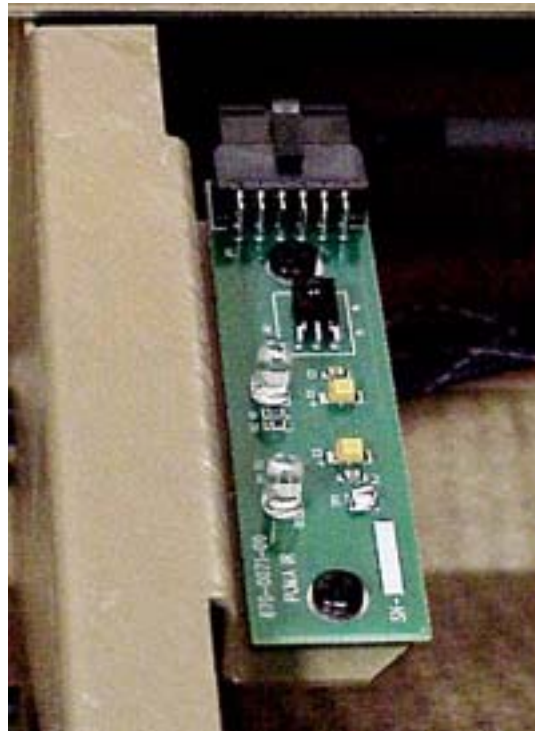
What to do: Lower the light shield

To lower the light shield, see *Task 1.1 Gain Access: Lift Light Shield* on page 82 or *Task 4.3 Gain Access to interior of unit* on page 140

Discussion: Normally, the light shield must be down to turn on the lamp. However, if you bypassed the light shield switch and the light shield is up, it may block the IR path.

Possible cause: IR receiver is disconnected from the Electronics Module

What to do: Remove the LV Power Supply cover and check the IR board. Also, check the bottom of the Electronics Module where all the connectors are located..



To inspect the IR Receiver, check cable connections to it, or replace it, see *Task 1.1.4 Gain Access: Remove DC Power Supply Panel* on page 95 and *Task 1.1.4.2 Remove/Replace IR/LED Board* on page 99. If you have rear access, see *Task 4.3.5 Gain Access: Remove/Replace DC Power Supply Panel* on page 154 and *Task 4.3.5.2 Remove/Replace IR/LED Board* on page 158.

What to do: Aim the remote control at the IR receiver, press any button on the remote, and watch the Remote LED on the electronics module. The Remote LED should flicker briefly (80ms) if it is receiving IR from the remote.



[Back to the the previous question](#)

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[Back to the previous question](#)

Margay doesn't respond to remote control

and remote *does not* control other Margays.

- What to do: Confirm that the batteries are in correctly. Then try new batteries. Or try a different remote.
- What to do: If the Margay's light shield is raised, it may block the light path to the IR receiver. Lower the light shield to its operating position.
To lower the light shield, see *Task 1.1 Gain Access: Lift Light Shield* on page 82 or *Task 4.3 Gain Access to interior of unit* on page 140
- What to do: The IR receiver is under the cover plate nearest to the Electronics Module. Remove this plate and check that the IR receiver board is properly plugged in.
To inspect the IR Receiver, check cable connections to it, or replace it, see *Task 1.1.4 Gain Access: Remove DC Power Supply Panel* on page 95 and *Task 1.1.4.2 Remove/Replace IR/LED Board* on page 99. If you have rear access, see *Task 4.3.5 Gain Access: Remove/Replace DC Power Supply Panel* on page 154 and *Task 4.3.5.2 Remove/Replace IR/LED Board* on page 158.
- What to do: Check the lower edge of the Electronics Module to see that all cables are plugged in properly. For information about Electronics Module cable connections, see *Task 1.2 Gain Access: Open Electronics Module Door* on page 111 and *Task 1.2.1 Servicing the Electronics Module* on page 112. To inspect cable connections from the rear, see *Task 5 Remove Electronics Module* on page 161.

[Back to the previous question](#)

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Opening rear panel does not shut off the lamp

OR — Opening the light shield does not shut off the lamp

Caution: This is a serious safety hazard.

Possible cause: The light shield switch is bypassed.

What to do: The light shield switch should open—that is, be released—whenever the rear panel is removed or the light shield is raised. This switch is sometimes taped closed for testing purposes: remove the tape from the switch.

Possible cause: Switch is wired wrong.

What to do: If the switch is in its open position, as it would be if the rear panel were off, and the lamps can still be lit, maybe the switch is wired wrong. The wires should connect to the two contacts nearest the hinge of the light shield.



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Screens do not fit together well

Note: If the screens fit together before servicing but do not fit after servicing, the screens were replaced on the wrong units. You may have to remove all the screens and check the placement of shims.

Possible cause: Poorly aligned wall of Margays

Discussion: If this is a new installation and the screens do not fit well the first time you put them on, this probably means the first (bottom) row of Margays is not straight.

What to do: The bottom row must be straight. It does not have to be level, but it must be straight. Do not trust your eye alone to judge straightness. Use a tightly stretched string. If you use a level, the level must be long enough to touch both of the end Margays at the same time. A tight string is better.

See the User Guide or the Installation & Configuration Guide for discussion of how to build a wall of Margays. For information about downloading additional documentation, see *Accessing Clarity's Customer Support Website* on page 171.

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Dirt or smudges in the picture

Discussion: It is easier to see dirt when the screen is white. Use the internal white test pattern.

Possible cause: Dirt or smudges in the image path (from the image lens forward)

What to do: If the smudge you see is out of focus and fuzzy, the smudge is on one of the mirrors. See *Task 3 Cleaning Mirrors, Lenses, and Screens* on page 127.

What to do: If the dirt is in very sharp focus, it is probably on the back of the screen.

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On-Screen Codes

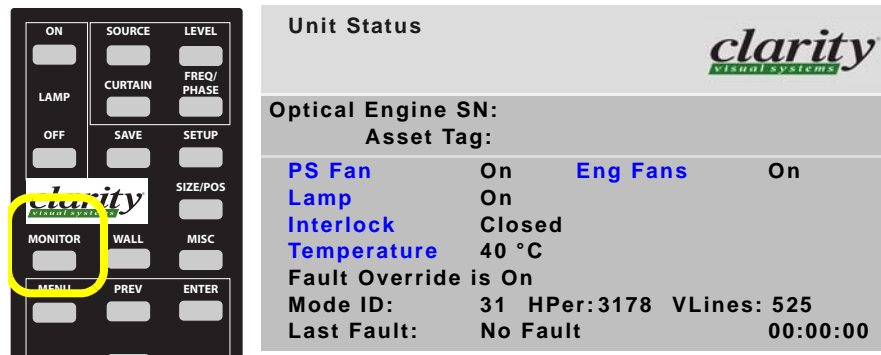
Working with On-Screen Codes

The On-Screen codes are red and amber lights that flash in specific patterns on the screen. The pattern of flashing lights can tell you what is wrong with the display. There are two ways to turn them on: manually; or enable them to come on automatically when the system has a fault.

Manually turning on the On-Screen code

- 1 With the remote control, press MONITOR.


You should see the red or amber lights flashing on the screen. This also opens the Display Status menu, but of course, you won't see it if the lamp is off.





- 2 If there is a bright picture, it may be difficult to see these lights. They are soft, out of focus lights; you may have to move around to see them. Or, press CURTAIN to make the screen black so they will be easier to see.
- 3 If you see a steady, unblinking, amber light, it means the lamp is on and there are no alarm conditions.
- 4 If the screen is black at this time, there are other reasons for it being black:
 - The curtain is on and black.
 - The source itself is a black picture.
 - There is no source, which turns the screen black.
 - There is some foreign object blocking the light path.
 - For more possible causes, see *Margay Troubleshooting Procedures* on page 13

Automatic On-Screen code display

If **Auto Codes** is checked in the Miscellaneous menu (Main Menu > Advanced Options > Miscellaneous), the code will start showing whenever there is a fault event that forces the lamp off.

Main Menu		
Picture	▶	
Size & Position	▶	
Aspect Ratio & Wall	▶	
Memory	▶	
Diagnostics	▶	
Advanced Options	▶	
Program Information	▶	

Advanced Options		
Color Balance	▶	
Miscellaneous Options	▶	
Lamp Settings	▶	
Serial Port Settings	▶	
Auto Setup Options	▶	
Engine Alignment	▶	
Menu Options	▶	
Message in Picture	▶	

Miscellaneous		
<input type="checkbox"/>	Beeper	
	Curtain Pattern	Logo
<input checked="" type="checkbox"/>	Auto Codes	
<input checked="" type="checkbox"/>	Plug and Play (EDID Enable)	
<input type="checkbox"/>	Inverted Installation	
	Preferred Source Detection	16 x 9
	HD Interlaced Content Motion	Normal

Reading On-Screen codes













The concise table below describes the pattern of flashing lights that display when Auto Codes are enabled or when you press MONITOR on the remote. You may wish to print out this page and keep it with you. For a more detailed list of the On-screen codes and what to do to rectify them, see *Margay On-screen Code Details and Actions to Take* on page 58.

Condition	Priority	Each block represents 0.2 seconds															
Door open	1	R		R		R											See Footnote 1
Power Supply Fan failed	2	R		Amber													
Engine Fan failed	3	R		Amber			R										
HV Power Supply failed	4	R		R		Amber											
Optical Engine Failed	5	R		R		Amber			R								
Lamp failed	6	R		R													
Wait On	7	R		R		Amber			Amber								
Wait (lamp cooling)	8	R		R		R		R									
Lamp off (Auto Off) ²	9	Amber			Amber			R									
Lamp off (Ready) ²	10	Amber			Amber												
Lamp Striking (starting)	11	Amber			Amber			Amber									
Lamp on and all OK	12	Amber on continuously															
R = Red To show the code, on the remote, press MONITOR once																	
1 To turn lamp on, you must first cycle AC power off, then on. These events start the On-Screen Codes automatically, if Auto Codes in the Miscellaneous menu is checked																	
2 A Lamp On command from the remote or from RS232 commands will turn lamp on																	
3 Lamp Saver turned lamp off; lamp is cooling and will turn on at end of cooling period																	

See Footnote 1

Margay On-screen Code Details and Actions to Take

Click below on the pattern of lights that you see flashing on the screen or turn to the page indicated.

- | | | |
|----|---|---|
| 1 |  | Door open (page 59) |
| 2 |  | High-Voltage Power Supply Fan failed (page 62) |
| 3 |  | DLP Fan failed (page 63) |
| 4 |  | High-Voltage Power Supply failed (page 64) |
| 5 |  | Optical Engine Failed (page 65) |
| 6 |  | Lamp failed (page 66) |
| 7 |  | Wait On (page 67) |
| 8 |  | Wait (Lamp cooling)) (page 68) |
| 9 |  | Lamp off (Auto Off (page 69) |
| 10 |  | Lamp off (Ready) (page 70) |
| 11 |  | Lamp Striking (starting) (page 71) |
| 12 |  | Lamp on and all OK (page 72) |

The numbers show the priority of the problem. If two events occur, such as a fan stops (priority 2) and the lamp is cooling (priority 8), only the lower numbered pattern (with the higher priority) will flash on the screen, in this case, priority 2, red-amber.

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Red Red Red

Priority 1

This code means: Door open

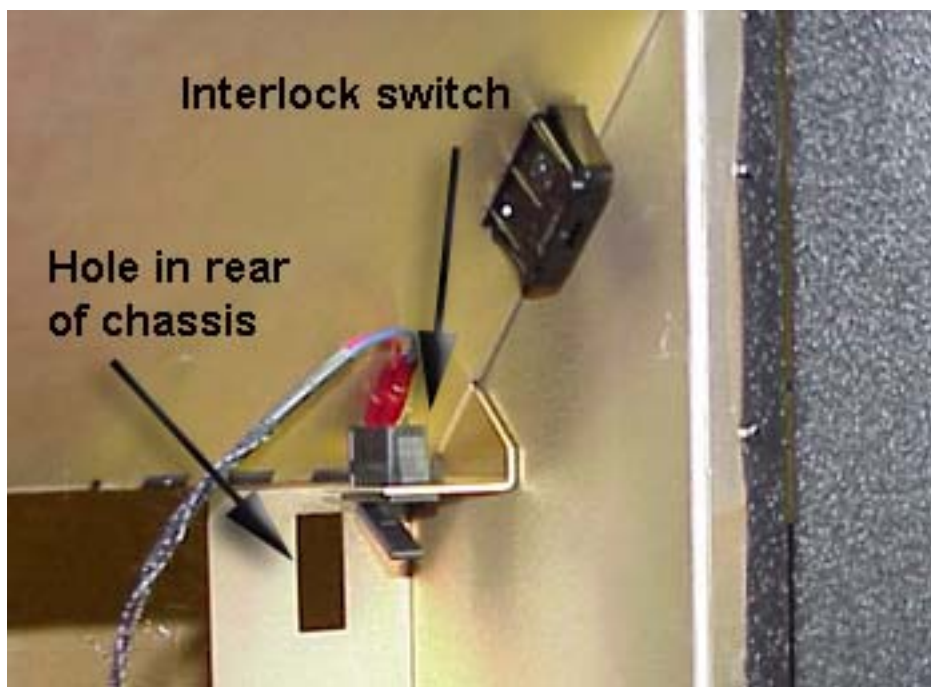
Possible cause: Rear panel is off.



What to do: Replace the rear panel and tighten all quarter-turn panel screws (6 of them).

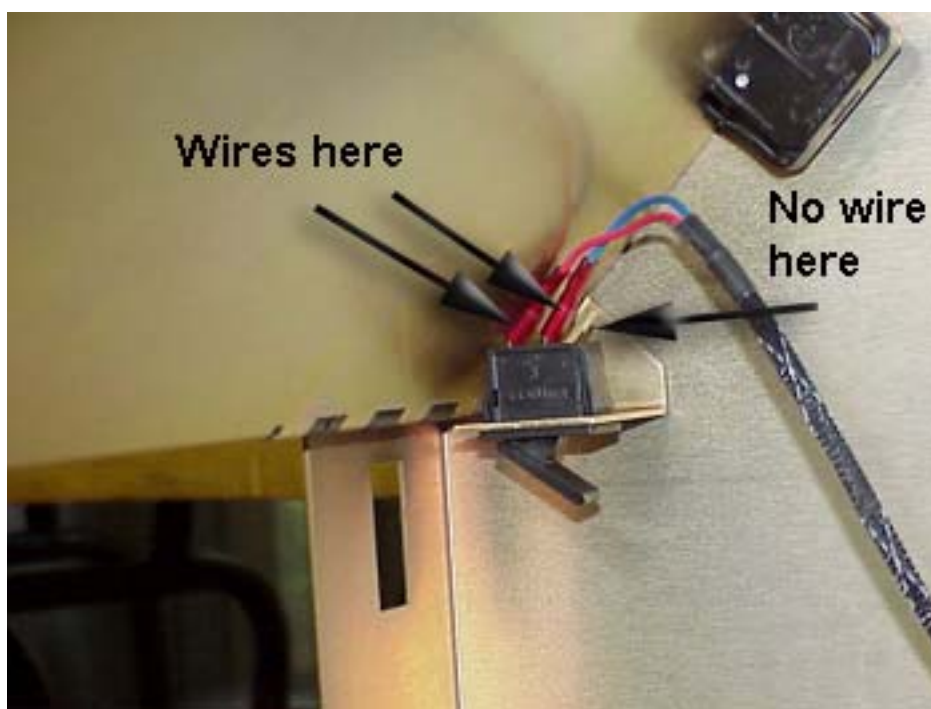
Discussion: There is only one switch located on the inside of the light shield near the hinge on the right side (looking from the front). When the rear panel is removed, this switch opens and the Electronics Module turns the lamp off. When the rear panel is in place and the light shield is lifted, the switch moves away from the rear panel, opens, and the Electronics Module turns the lamp off. During troubleshooting, it is all right to bypass this switch by temporarily taping it closed. Be sure to remove the tape when you are finished.

Possible cause: Light shield is lifted.



What to do: Check that the light shield is lowered and the screw is tightened.

Possible cause: Wires disconnected from either interlock switch.



What to do: Check that two wires are connected to the interlock switch. And, of course, that the switch is closed by lowering the light shield and replacing the rear panel.

Possible cause: Cable disconnected from the bottom of the Electronics Module

What to do: First, try taping the interlock switch closed. Then cycle AC power. If this does not make the Door Open alarm disappear, maybe the cable from the interlock switch is disconnected at the Electronics Module. Partially remove the Electronics Module and re-seat all the connectors on the bottom of it.

Caution: Be sure to remove the tape from the interlock switch after you have finished testing.

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Red Amber

Priority 2

This code means: High-Voltage Power Supply Fan failed

Possible cause: Fan cable loose

What to do: Check the fan cable connection. To access the fans, see *Task 1.1.3 Gain Access: Remove High-Voltage Power Supply Panel* on page 89 or *Task 4.3.4 Gain Access: Remove High-Voltage Power Supply Panel* on page 148

Possible cause: Fan has failed.

What to do: Replace the fan. To access the fans, see *Task 1.1.3 Gain Access: Remove High-Voltage Power Supply Panel* on page 89 or *Task 4.3.4 Gain Access: Remove High-Voltage Power Supply Panel* on page 148.

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Red Amber Red

Priority 3

This code means: DLP Fan failed

Possible cause: Loose fan cable.

What to do: Check fan cable connection. To access the Lamp Fan, see *Task 1.1.3 Gain Access: Remove High-Voltage Power Supply Panel* on page 89 or *Task 4.3.4 Gain Access: Remove High-Voltage Power Supply Panel* on page 148.

Discussion: The Lamp Fan is not yet field-replaceable. Contact Clarity Customer Support for help.

Possible cause: Old firmware.

What to do: Download the latest firmware from Clarity's website.

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Red Red Amber

Priority 4

This code means: High-Voltage Power Supply failed

Possible cause: The 350 volt section of the High-Voltage Power Supply has failed.

What to do: Swap power supplies with another display. If the problem follows the power supply, order a new power supply.

Discussion: The 350 volts goes to the ballast. The ballast boosts this voltage up to 25,000 volts to strike the lamp. As the lamp strikes and turns on, the ballast drops this to less than 100 volts to keep the lamp on. Without the 350 V from the High-Voltage Power Supply, there will be no voltage to the lamp.

To Remove/Replace High-Voltage Power Supply, see *Task 1.1.3 Gain Access: Remove High-Voltage Power Supply Panel* on page 89 or *Task 4.3.4 Gain Access: Remove High-Voltage Power Supply Panel* on page 148.

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Red Red Amber Red

Priority 5

This code means: Optical Engine Failed

Note: This code is applicable only for displays with DLP engines, such as Margay.

Possible cause: Electronics Module may have failed.

What to do: Swap Electronics Modules with another display. If the problem follows the Electronics Module, order a new Electronics Module.

Possible cause: Loose cables.

What to do: Check all cable connections to the Optical Engine. Check that the HDMI cable retainers are in place at both ends of the cable. Check the HDMI cable for kinks or crimps. Reseat all cables. See *Task 1.1.6 Remove/Replace Optical Engine* on page 107 or *Task 4.3.2 Removing the Optical Engine* on page 143.

Possible cause: Optical Engine may have failed.

What to do: Swap Optical Engines with another display. If the problem follows the Optical Engine, order a new Optical Engine. See *Task 1.1.6 Remove/Replace Optical Engine* on page 107 or *Task 4.3.2 Removing the Optical Engine* on page 143.

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Red Red

Priority 6

This code means: Lamp failed

Possible cause: The lamp itself failed to strike (light).

What to do: Remove the lamp and look at it. If it has loose glass inside, you know it is dead.

What to do: Swap this lamp for another lamp known to be good, such as a lamp from another Margay that is working. Put the suspected bad lamp in the other Margay. If the new lamp works, and the old lamp doesn't work in the other Margay, you can be sure it is the lamp.

Possible cause: The ballast has failed.

What to do: If you know the lamp is good from the test above, swap the ballast with a known good ballast from another Margay that is working properly. If the lamp lights, the ballast was bad.

Discussion: It is better to do your tests with a lamp or ballast from another Margay that is working than to use a new lamp or ballast out of the box. Why? Because there is a small chance that the new still-in-the-box lamp or ballast is bad and will not work. This is a very rare event, but when you are testing, it is good to test with something that you know works.

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Red Red Amber Amber

Priority 7

This code means: Wait On

Possible cause: Lamp Saver is on, there was no source, and now there is a source.

What to do: Be patient. When the cool-down period is ended, the lamp will turn on automatically.

Discussion: The Margay had no source for the length of the Lamp Saver setting, so the lamp was turned off. During the cool-down period, the source returned, but since the cool-down period was not complete, the lamp is still off.

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Red Red Red Red

Priority 8

This code means: Wait (Lamp cooling))

Possible cause: Lamp is in its cool-down period.

What to do: The Margay is in the Lamp off (ready) state and is waiting for an ON command. The Margay will turn on the lamp when it receives a Lamp On command from the remote or from RS232.

Discussion: A cool-down period of about one minute occurs after the lamp is turned off to prevent it from re-striking when it is hot. The lamp must be cool before it is started again. Every time the lamp is turned off, the Margay goes into this Wait state, and the lamp fan runs for one minute. That is why it is important to turn off the lamp and wait for it to cool before turning off the AC power, which stops the fan.

When AC power is turned on, the Margay electronics does not know how long the lamp has been off. It could have been days ago that the lamp was turned off, and they are cool. Or it could have been that AC power was lost for one second. Therefore, for safety (of the lamp) the cool-down period starts whenever AC power is applied. At the end of the cool-down period one of these events will occur:

- The fan will turn off and the Margay will go into Standby to wait for a signal from the remote control or RS232 to turn the lamp on.
- The lamp will turn on automatically because Auto Lamp On was selected in the Advanced Options > Lamp Settings menu.

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Amber Amber Red

Priority 9

This code means: Lamp off (Auto Off)

Possible cause: There is no problem. The lamp was turned off by the Lamp Saver feature, which turns the lamp off when there is no source picture for a period of time.

What to do: Turn on the lamp with the remote, or with an RS232 command. Check the source picture to see that it is present. Possibly the Margay was working from an input connector that had no source connected to it.

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Amber Amber

Priority 10

This code means: Lamp off (Ready)

Possible cause: There is no problem. The lamp is waiting for you to command them to turn on.

What to do: Aim the remote at the Margay and press the ON button. Or send a Lamp On command with RS232 commands. Or leave the lamp off.

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**Amber Amber Amber**

Priority 11

This code means: Lamp Striking (starting)

Possible cause: There is no problem.

Discussion: The lamp is trying to light. Give it time. It takes about ten seconds for the lamp to light the Electronics Module to know that it is lit. If the lamp does not light after several tries, the code will become [Red-Red](#)

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Solid Amber

Priority 12

This code means: Lamp on and all OK

Possible cause: There is no problem. The lamp is on. If the screen is black, then check the following.

What to do: Check for test patterns. Maybe a black test pattern is on. With the remote: MENU > Diagnostics > Test Patterns. Select the test pattern None and press ENTER. Or select any colored pattern and press ENTER. You should see that pattern on the screen.

What to do: Check the SOURCE LED on the electronics module. If it is red, there is no source picture on the selected input, even if there are source pictures on other inputs.

Discussion: When there is no source, the Margay puts up the Curtain, usually a black test pattern, but sometimes other colors or the Clarity logo.

What to do: Check the source itself. If the source LED on the electronics module is green, there is a picture on the selected input. Maybe the source picture is all black.

Possible cause: The lamp is off, but the Margay reports that it is on.

What to do: Without fully opening the Rear Panel, peek through the crack between the Rear Panel and the chassis to see if the lamp is really on. If it is and you see this steady amber indicator on the screen, the electronics module is reporting incorrectly. Turn off the lamp, wait for the fans to stop, then cycle AC power off and on to reset the electronics.

What to do: Something is preventing the light from getting through the optics to the screen. Is there light coming out of the optical engine's lens?

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Electronics Module LEDs

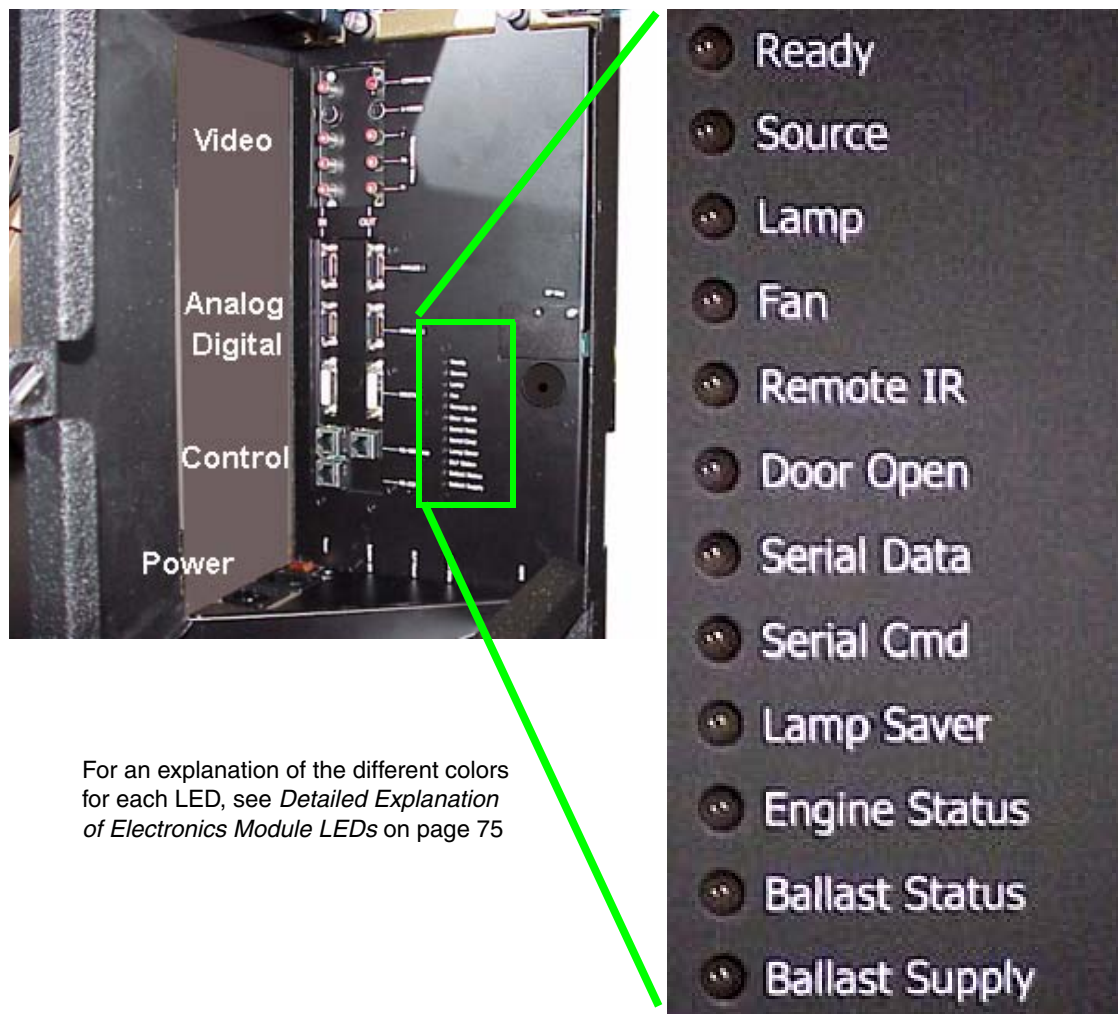
Using Electronics Module LEDs

The LEDs on the electronics module can give you more detailed information about the Margay's state.

To see LEDs

The LEDs are on the electronics module. From the rear, you can see them easily, that is, if there aren't too many cables in the way. From the front, open the screen. Then open the electronics module door to the right.





Detailed Explanation of Electronics Module LEDs

LED Name	Condition	Meaning
Ready	Off	Either the lamp is on, or there is no power to the Electronics Module. Check the Source LED
	Green	The system is ready and the lamp is waiting for an ON command
	Amber	The system is in a cool-down period. You must wait until this period is over (and the Ready LED turns green) before you can turn on the lamp
	Red	A system fault occurred. You must cycle AC power off, then on again, to restore the system to a ready state
Source	Off	There is no power to the Electronics Module. Check AC input. Check the power connector to the Electronics Module
	Green	The selected source is present and valid
	Amber	The system is adjusting to the current source automatically
	Red	There is no source picture coming to the selected connector, or the selected source is invalid or out of range
Lamp	Off	The lamp is off
	Green	The lamp is on
	Amber	The lamp is striking (trying to start)
	Red	The lamp has failed to strike after repeated attempts. The system will not try to light the lamp again. You must cycle AC power off, then on again, to try the lamp again
Fan	Off	The fans are off
	Green	All fans are running properly
	Amber	One of the fans failed, but it is running again
	Red	One of the fans has failed. This condition prevents the lamp from lighting
Remote IR	Off	At this moment, there is no IR (infra-red) being received by the IR sensor
	Green	IR was received by the IR sensor. This LED is normally green briefly (80ms). If it is continually green, it means it is receiving IR radiation from something other than the remote control and it may not be able to respond to the remote control
Door Open	Off	There is no power to the Electronics Module
	Green	The rear panel is closed and the light shield is closed, or the door switch has been bypassed in some way
	Amber	Either the rear panel was opened or the light shield was lifted. Both are back in place now, but you must cycle AC power off, then on again, to start the lamp
	Red	Either the rear panel is open or the light shield is up

Detailed Explanation of Electronics Module LEDs (Continued)

LED Name	Condition	Meaning
Serial Data	Off	No serial data is being received at this moment
	Green	Serial data is being received. This LED flashes briefly (80ms) each time a serial data command is received
Serial Cmd	Off	The serial data, if there is any right now, is not addressed to this Margay
	Green	The serial data being received is addressed to this Margay. The command was addressed either to this specific Margay alone, or to a group of Margays that includes this one, or to all Margays in this serial string
Lamp Saver	Off	Lamp Saver is not active now
	Green	Lamp Saver is active, and the lamp is on
	Amber	Lamp Saver is active, and the lamp is off. The system is in the cool-down period. At the end of this period, if there is still a valid source, the lamp will turn on automatically
	Red	Lamp Saver is active. The lamp is off because there is no source picture on the selected connector. If a source is detected on this connector, the lamp will turn on automatically
Engine Status	Off	There is no power to the Electronics Module
	Green	The optical engine is operating properly
	Red	The optical engine had a fault, or the Electronics Module is not able to communicate with it
Ballast Status	Off	Lamp off
	Green	Lamp on
	Amber	
	Red	Ballast fault or communication failure
Ballast Supply	Off	High voltage is off
	Green	High voltage is on and ready
	Amber	High voltage is on but not ready
	Red	The Electronics Module had to wait more than 10 seconds for a ready state from the High voltage supply

Front-Access Maintenance and Service Procedures

Introduction

The procedures in this chapter are similar to those contained in “Rear-Access Maintenance and Service Procedures” on page 129, but the actual steps and methods you’ll use may be different.

Note: Directions that refer to the right or left of the unit are for the unit itself when viewed from the front. Thus, after you remove the screen and stand at the front of the unit, the Electronics Module, power switch, and plug receptacle are on the rear right side of the unit, which is on your right, behind the Electronics Module door.

If you have a part under warranty or a part can be repaired under Clarity’s repair option, contact Clarity Customer Service. See *Contact Clarity Customer Support* on page 173.

Required Tools

- #1 and #2 Phillips screwdrivers, stubby #2 Phillips screwdriver
- 5/16" socket and ratchet handle or combination (box/open end) wrench
- 7/16" socket wrench or nut driver
- Needle-nose pliers

1 Opening the Screen

The method for opening the screen depends on the configuration you have. Margay screens have very thin mullions and “float.” Each screen rests on the screen below it and is compressed by the screens on either side. To prevent damage to the screens, you must remove the screens in a specific manner and order.

Note: Before you remove any screens, be aware that each screen is slightly different; when the screens were installed, some may have had shims placed to ensure precise alignment. Make note of which screen was installed on which display before you remove them so that when you replace the screens the correct screen goes on the correct display.

- 1 Using the remote control, turn off the lamps of all units on which you need to perform service (even if you are only going to remove the screen) and allow the cooling fans to stop (approximately 2 minutes) before opening the screen.

Aim the remote
at the unit and
press OFF to turn
off the lamps



2 Remove a screen in the middle of a wall.

The general rule for opening screens in a wall is to start with an outermost topmost screen and work your way in towards the center. You need at least two open sides to safely remove screens in a wall.

For example, in a 3x3 wall illustrated below, the topmost, outermost screen would be the top right or top left screen. Thus, to remove the center screen, start by removing the top-left corner screen first.

Remove the screens in this order...

1	2	
3	...if this is the screen to be removed ...	

To open the screen, you must be aware that simply pulling from the outside will cause the inside edge of the screen to press up against the screen next to it and crush the edge.

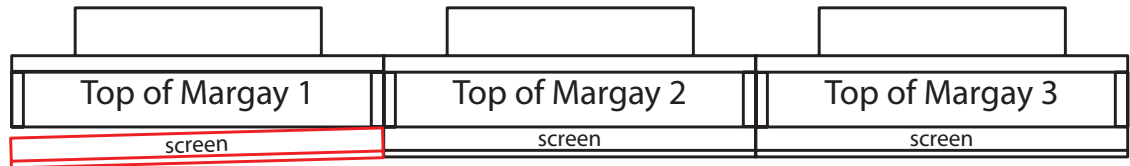
Note: When removing screens from Banners, remove outside screens and work towards the center. For Towers, remove the top screen and work down. For stand-alone installations, simply remove the screen.

When Margays are installed in a row, the screens are very close together.

View from above a row of Margays

Task 1: Opening the Screen

Pulling a screen from the outside of the row causes it to bind on its neighbor, possibly damaging both.



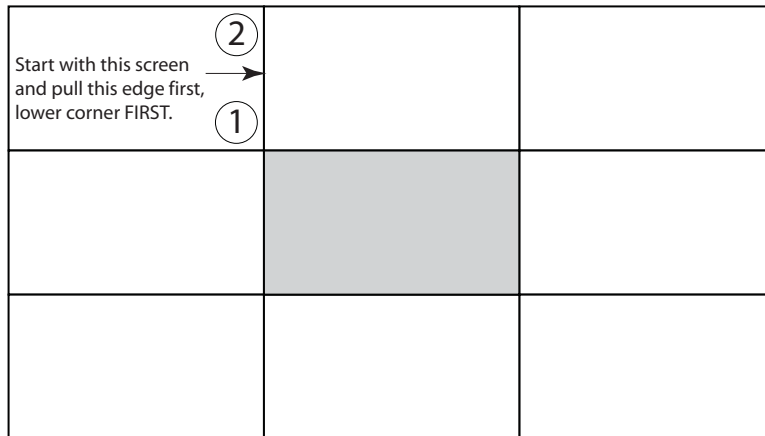
The result of pulling a screen from the outside edge.

DON'T DO THIS!

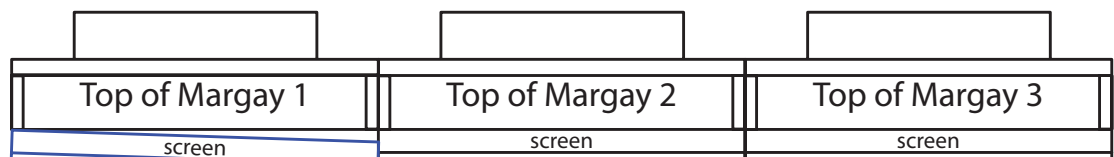


CRACK!

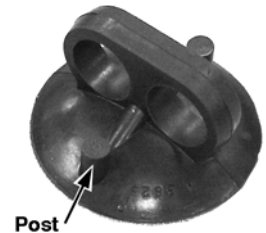
- 3** The proper way is to pull first on the inside corner of an outside unit.



- 4** Pull out steadily about 1/2" (12 mm). The screen will pop out at this corner.

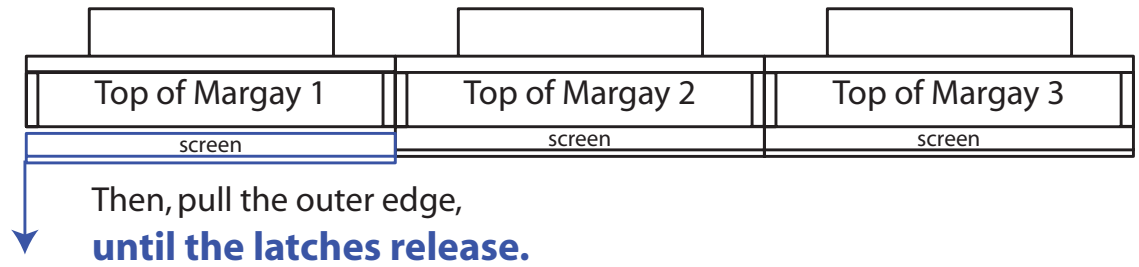


Pull inside edge of screen first,
but just a little.

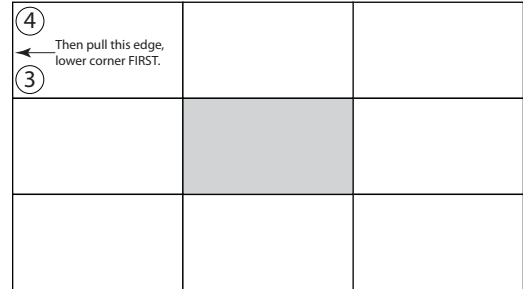


Note: Release the suction cup by pinching the two rubber posts together.

- 5 Pull the outer edge to release all the spring latches.



Pull outside lower corner third, and then pull outside upper corner last



- 6 Pull the screen all the way out on the support rails.

Caution: When the screen is fully extended on the support rails, the unit could tip forward if not tied back to a support structure or wall, or anchored to other units in an appropriate fashion. For more information, see the Margay User Guide..

- 7 Lift the screen up off the support pins to remove the screen from the support rails.

Caution: Before you perform any work inside the unit, be sure to completely power down the unit and remove the power cord to prevent electric shocks and to prevent someone from inadvertently powering up the unit and turning on the lamp. For specific steps, refer to *Task 1.2 Gain Access: Open Electronics Module Door* on page 111.

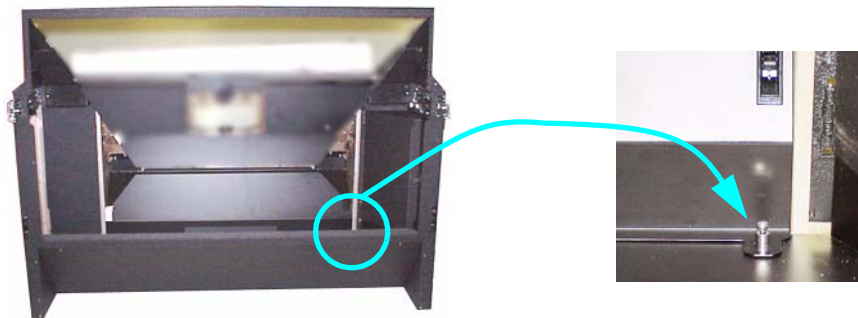
All the tasks in this manual are laid out hierarchically; that is, tasks must be performed in the order presented. If you already know how to access specific components, you may go directly to those tasks.

Where to go from here	
Gain Access: Lift Light Shield	82
Gain Access: Open Electronics Module Door	111
Remove/Replace Large Mirror	119
Removing and Replacing the Small Mirror	124
Cleaning Mirrors, Lenses, and Screens	127
When you have completed the tasks, return here	

- 8 Replace the screen (See *Task 2 Replacing Screens* on page 125).

1.1 Gain Access: Lift Light Shield

- 1 Using the remote control, turn off the lamp and allow the cooling fans to stop (approximately 2 minutes) before proceeding.
- 2 Open the screen (*Task 1 Opening the Screen* on page 78).
- 3 Power down the unit and remove the power cord (for detailed instructions, see *Task 1.2 Gain Access: Open Electronics Module Door* on page 111).
- 4 Loosen the light shield screw.



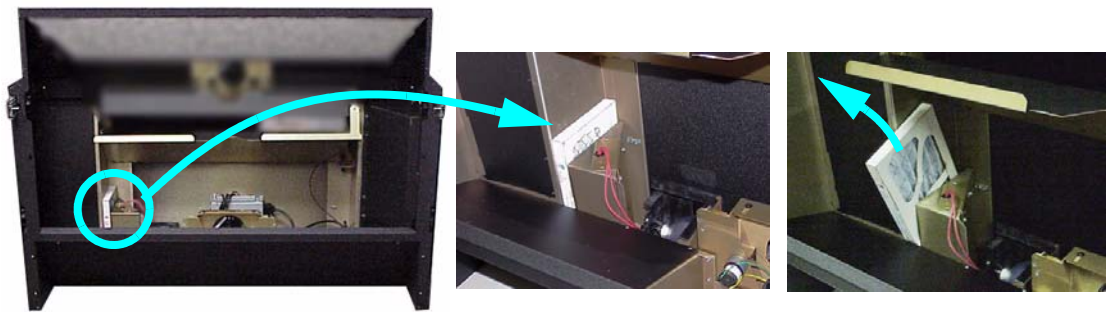
- 5 Lift and latch the light shield in its up position.

Where to go from here:	
Change Air Filter	83
Remove/Replace Lamp Ballast	84
Gain Access: Remove High-Voltage Power Supply Panel.	89
Gain Access: Remove DC Power Supply Panel	95
Remove/Replace Lamp	102
Remove/Replace Optical Engine.	107
When you have completed the tasks, return here	

- 6 Pull the light shield free of the latch and push down into the closed position.
- 7 Tighten the light shield screw.
- 8 Return to *Task 1 Opening the Screen* on page 78.

1.1.1 Change Air Filter

- 1 Using the remote control, turn off the lamp and allow the cooling fans to stop (approximately 2 minutes) before proceeding.
- 2 Open the screen (*Task 1 Opening the Screen* on page 78).
- 3 Power down the unit and remove the power cord (for detailed instructions, see *Task 1.2 Gain Access: Open Electronics Module Door* on page 111).
- 4 Lift the light shield (*Task 1.1 Gain Access: Lift Light Shield* on page 82).
- 5 Lift out the air filter, tilting it forward as you lift.



- 6 Insert a new air filter. Confirm that the airflow direction is correct, that is the flow should be into the unit.
- 7 Return to *Task 1.1 Gain Access: Lift Light Shield* on page 82.

Task 1: Opening the Screen

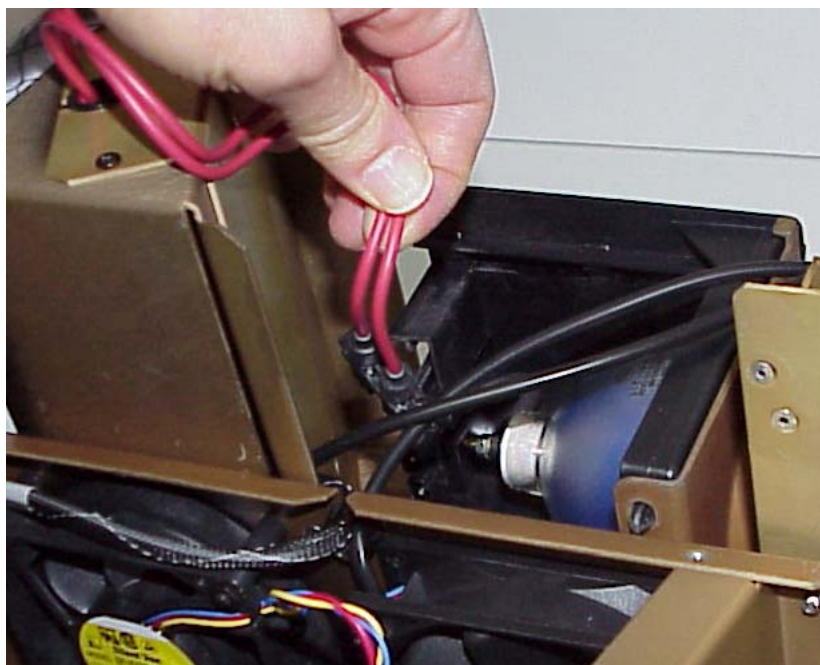
Task 1.1: Gain Access: Lift Light Shield

Task 1.1.2 Remove/Replace Lamp Ballast

1.1.2 Remove/Replace Lamp Ballast

Note: For this procedure, you'll need a stubby screwdriver.

- 1 Using the remote control, turn off the lamp and allow the cooling fans to stop (approximately 2 minutes) before proceeding.
- 2 Open the screen (*Task 1 Opening the Screen* on page 78).
- 3 Power down the unit and remove the power cord (for detailed instructions, see *Task 1.2 Gain Access: Open Electronics Module Door* on page 111).
- 4 Lift the light shield (*Task 1.1 Gain Access: Lift Light Shield* on page 82).
- 5 Detach the red Lamp power cable.



- 6 Remove the two securing screws at the top of the Ballast.

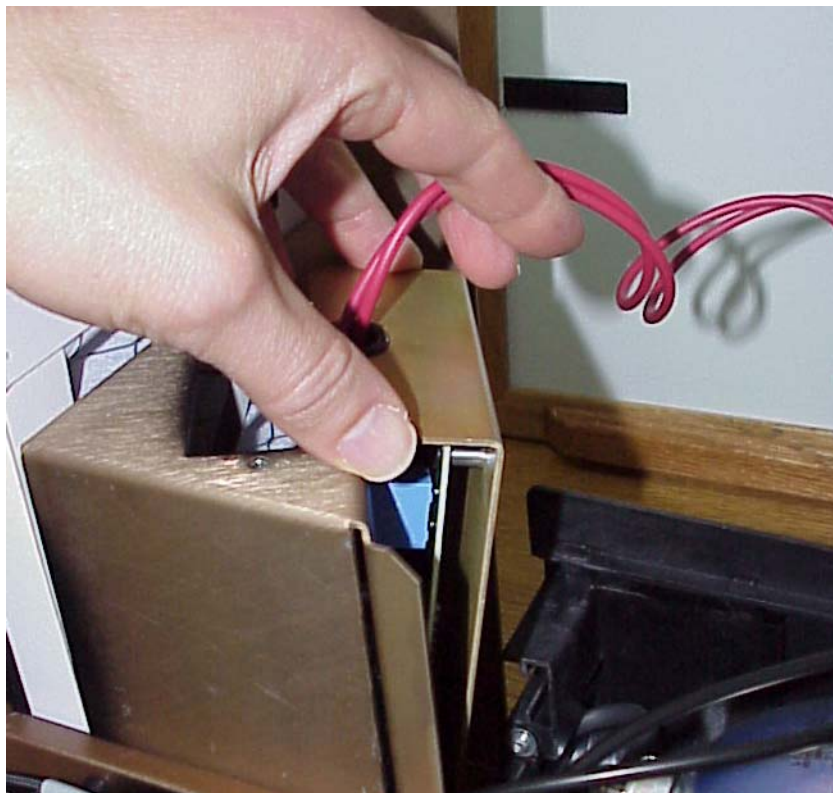


Task 1: Opening the Screen

Task 1.1: Gain Access: Lift Light Shield

Task 1.1.2 Remove/Replace Lamp Ballast

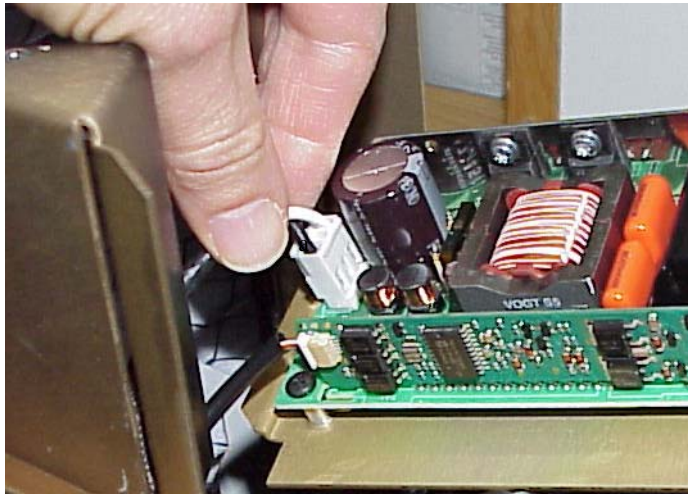
- 7 Lift up the Ballast and tilt it toward the rear of the unit.



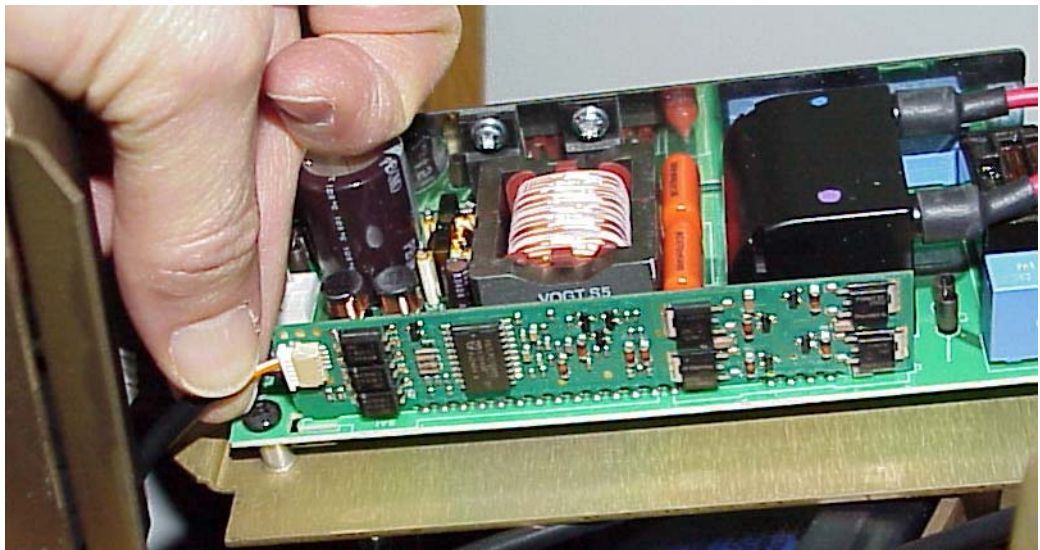
- 8 Partially remove the Ballast from the enclosure.

9 Detach the two cables leading to the ballast from the Ballast enclosure:

- Power cable



- Ballast sense and control cable



10 Remove the old Ballast.

11 Remove the new Ballast from its packaging.

12 Connect the cables leading from the enclosure to the new Ballast:

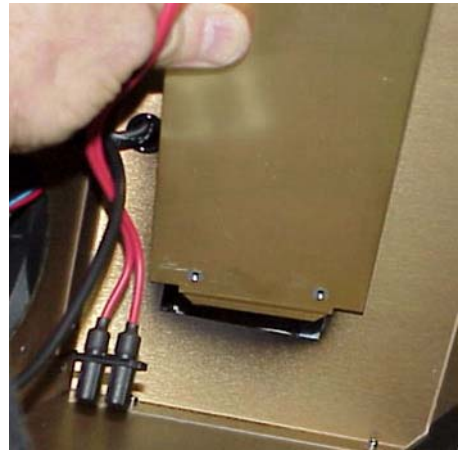
- Ballast sense and control cable
- Power cable

Task 1: Opening the Screen

Task 1.1: Gain Access: Lift Light Shield

Task 1.1.2 Remove/Replace Lamp Ballast

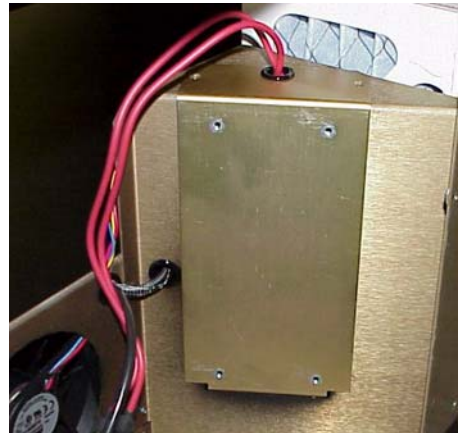
- 13** Insert the Ballast flange (at bottom of the Ballast) into the slot of the enclosure.



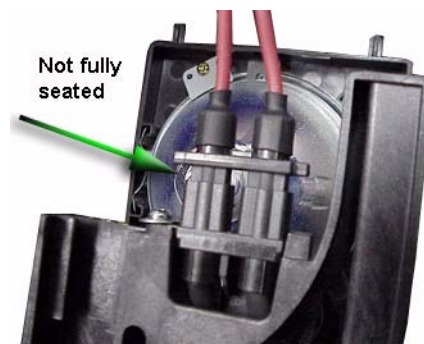
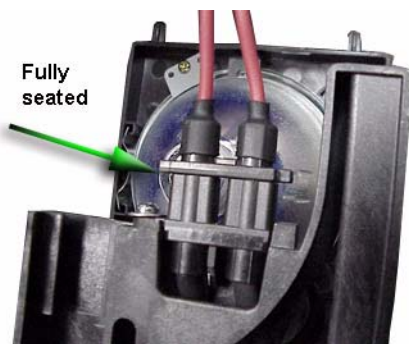
- 14** Tilt the Ballast into the enclosure.

- 15** Insert and tighten the two screws.

- 16** Reattach the red Lamp cable.



Caution: Ensure that the lamp cable is fully seated.



- 17** Return to *Task 1.1 Gain Access: Lift Light Shield* on page 82.

1.1.3 Gain Access: Remove High-Voltage Power Supply Panel

- 1 Using the remote control, turn off the lamp and allow the cooling fans to stop (approximately 2 minutes) before proceeding.
- 2 Open the screen (*Task 1 Opening the Screen* on page 78).
- 3 Power down the unit and remove the power cord (for detailed instructions, see *Task 1.2 Gain Access: Open Electronics Module Door* on page 111).
- 4 Lift the light shield (*Task 1.1 Gain Access: Lift Light Shield* on page 82).
- 5 Remove the three screws that secure the High-Voltage Power Supply panel.



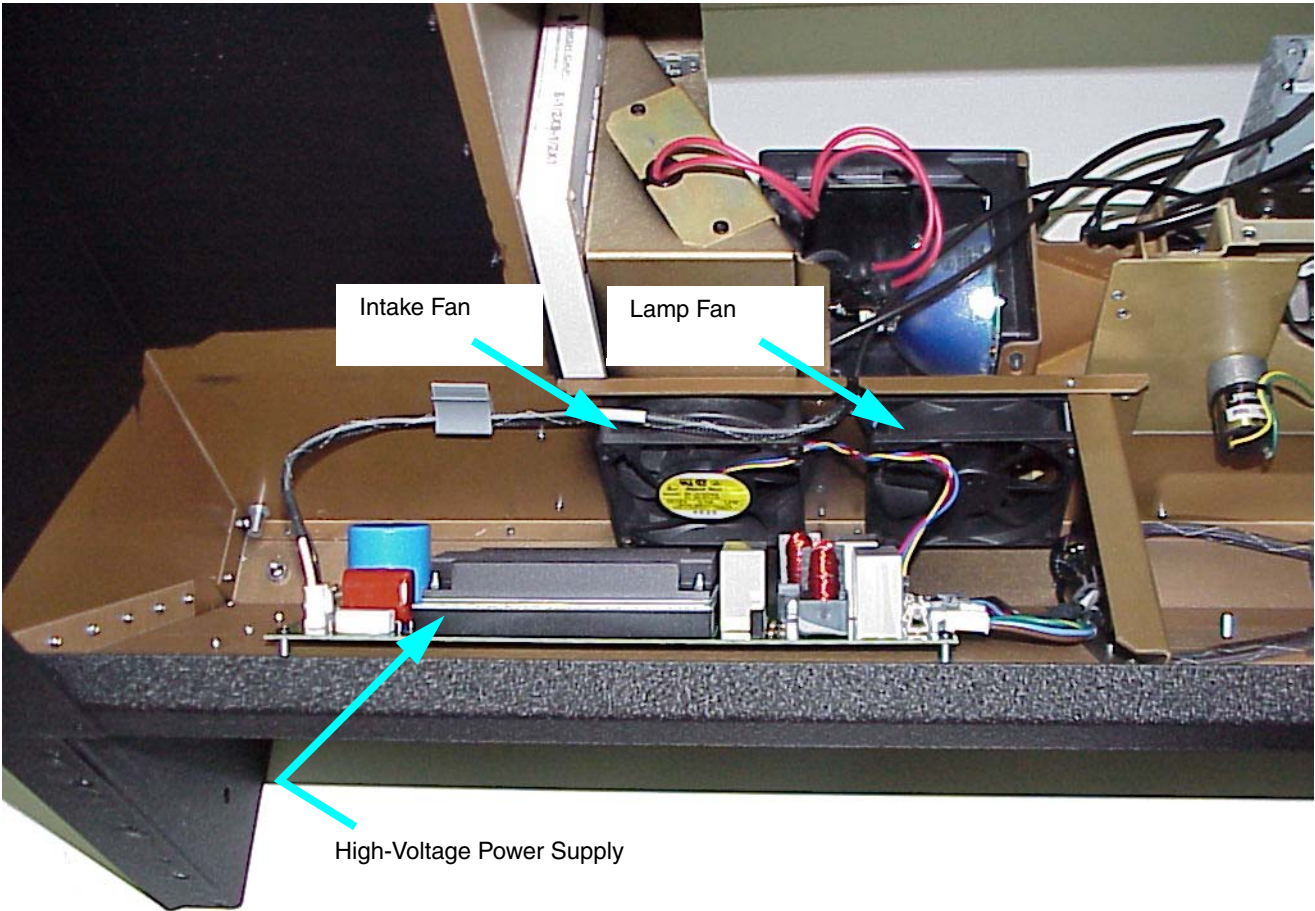
High-Voltage
Power Supply
Panel

Note: Notched
end at left side
of chassis



Task 1: Opening the Screen
Task 1.1: Gain Access: Lift Light Shield
Task 1.1.3 Gain Access: Remove High-Voltage Power Supply Panel

- 6 Remove the High-Voltage Power Supply Panel.
Within this cavity are three parts: the Intake Fan, the Lamp Fan, and the High-Voltage Power Supply.



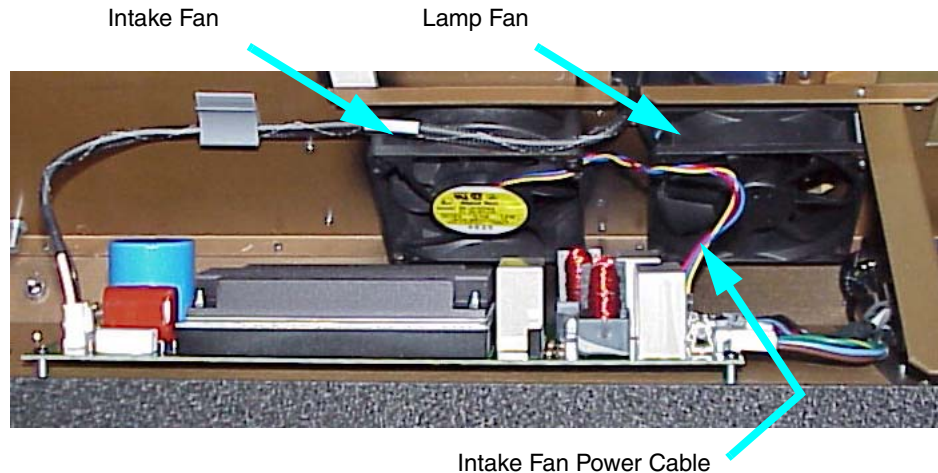
Where to go from here	
Remove/Replace Intake Fan	91
Remove/Replace Lamp Fan	91
Remove/Replace AC Fuse	92
Remove/Replace High-Voltage Power Supply.	92
When you have completed the tasks, return here	

- 7 Replace the High-Voltage Power Supply Panel and secure with the three screws you removed earlier.
- 8 Return to *Task 1.1 Gain Access: Lift Light Shield* on page 82.

1.1.3.1 Remove/Replace Intake Fan

Note: You'll need a ratchet handle and 5/16" socket or 5/16" combination wrench to remove the mounting nuts because of the limited space within the High-Voltage Power Supply cavity.

- 1 Disconnect the Intake Fan power cable attached to the right side of the power supply.



- 2 Remove the mounting nuts from the corners of the Intake Fan.
 - 3 Remove the old Intake Fan from the mounting studs.
 - 4 Replace the new Intake Fan on the mounting studs. Be sure the label on the fan is visible (label should point to the front of the unit, which is the opposite of the Lamp fan).
 - 5 Replace and gently tighten the mounting nuts.
- Caution:** Do not over-tighten the mounting nuts. The corners of the fan could break off!
- 6 Reconnect the Intake Fan power cable.
 - 7 Return to *Task 1.1.3 Gain Access: Remove High-Voltage Power Supply Panel* on page 89.

1.1.3.2 Remove/Replace Lamp Fan

The Lamp Fan is not yet field-replaceable. Contact Clarity Customer Support for help.

Task 1: Opening the Screen

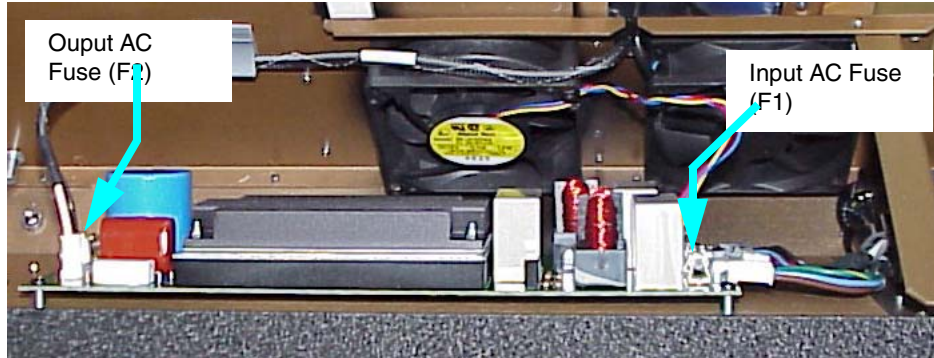
Task 1.1: Gain Access: Lift Light Shield

Task 1.1.3 Gain Access: Remove High-Voltage Power Supply Panel

Task 1.1.3.3: Remove/Replace AC Fuse

1.1.3.3 Remove/Replace AC Fuse

Fuses are located on the right and left side of the High-Voltage Power Supply.

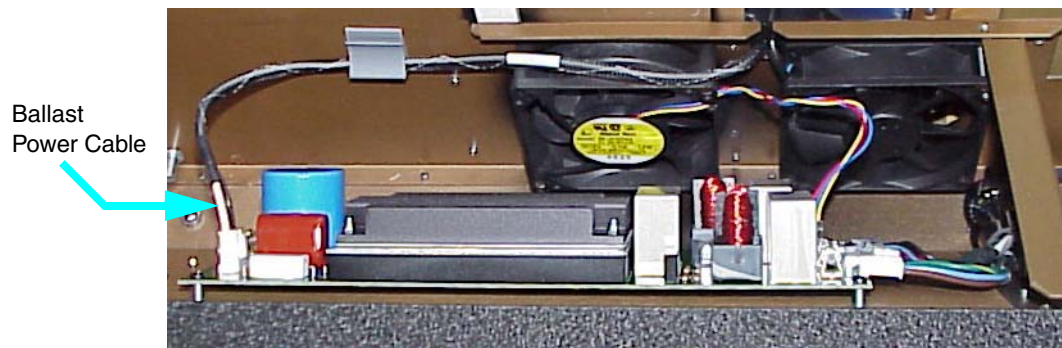


We suggest that you purchase a few extra fuses (6.25A, 250V, 3AG, Slo-Blo) from an electronics supply store.

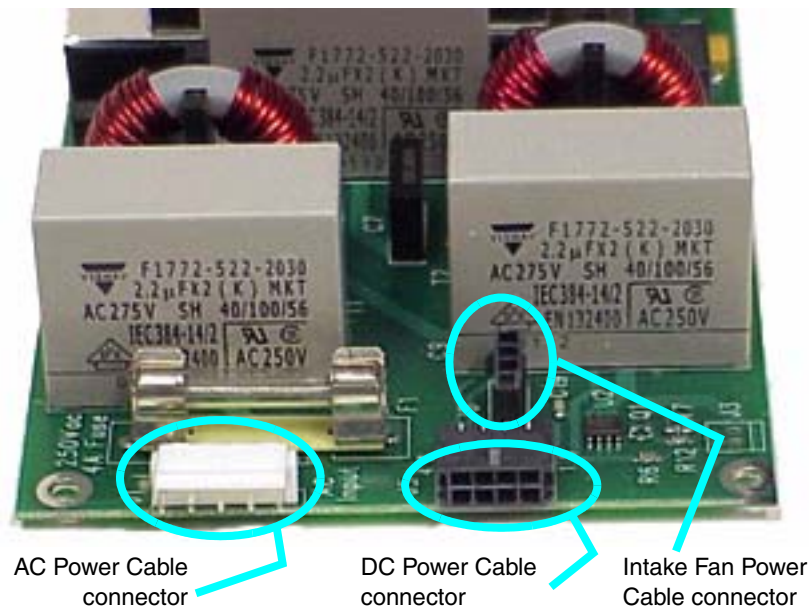
1.1.3.4 Remove/Replace High-Voltage Power Supply

- 1 Disconnect all four cables attached to the High-Voltage Power Supply.

- a The black/white Ballast Power cable (left side of power supply).



- b** The Intake Fan power cable (bottom right corner).

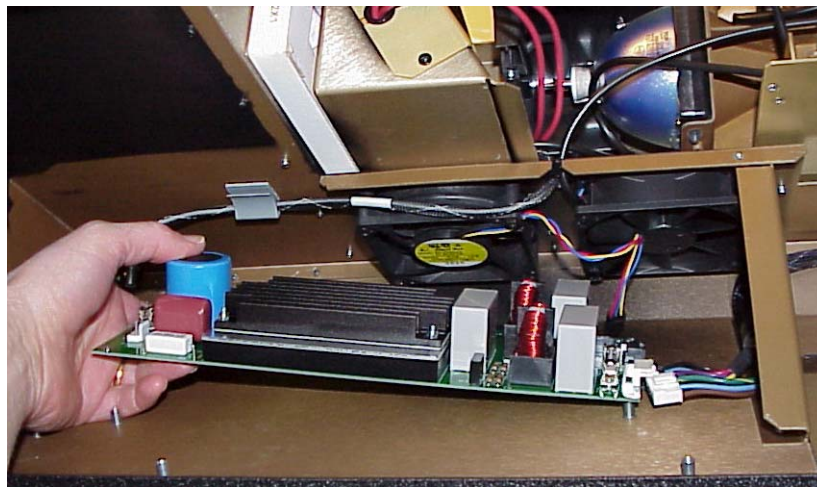


Note: This illustration shows the right side of the High-Voltage Power Supply Board

- c** The AC Power cable (front right corner).

- d** The DC Power cable (center right side).

- 2** Remove the two mounting screws on the front edge.
- 3** Remove the old power supply board by lifting it off the rear snap-mount posts.



Note: Be sure to leave the Nomex protective shielding in place, which is not shown in this photograph.

- 4** Remove the new power supply board from the packaging.
- 5** Reconnect the four cables you disconnected earlier:
 - a** The black/white Ballast Power cable (left side of power supply).

Task 1: Opening the Screen

Task 1.1: Gain Access: Lift Light Shield

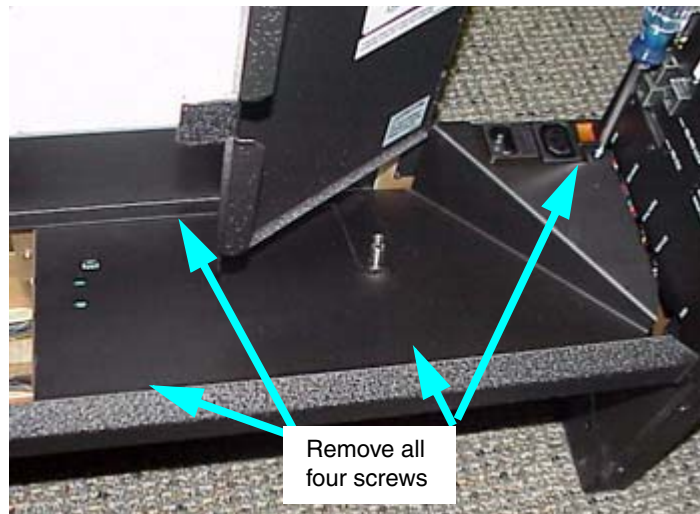
Task 1.1.3 Gain Access: Remove High-Voltage Power Supply Panel

Task 1.1.3.4: Remove/Replace High-Voltage Power Supply

- b** The Intake Fan power cable (rear right corner).
 - c** The AC power supply cable (front right corner).
 - d** The DC power supply cable (center right side).
- 6** Install the new power supply board onto the two rear snap-mount posts, and insert and tighten the two mounting screws.
- 7** Return to *Task 1.1.3 Gain Access: Remove High-Voltage Power Supply Panel* on page 89.

1.1.4 Gain Access: Remove DC Power Supply Panel

- 1 Using the remote control, turn off the lamp and allow the cooling fans to stop (approximately 2 minutes) before proceeding.
- 2 Open the screen (*Task 1 Opening the Screen* on page 78).
- 3 Power down the unit and remove the power cord (for detailed instructions, see *Task 1.2 Gain Access: Open Electronics Module Door* on page 111).
- 4 Lift the light shield (*Task 1.1 Gain Access: Lift Light Shield* on page 82).
- 5 Remove two screws at the front edge of the DC Power Supply Panel and one screw at the rear of the panel under the light shield.
- 6 Open the Electronics Module door.
- 7 Remove the screw at the right rear corner of the panel (in front of the main power switch).



- 8 Close the Electronics Module door.
- 9 Lower the light shield and leave it barely resting on the DC Power Supply Panel.
- 10 Open the Electronics Module door.

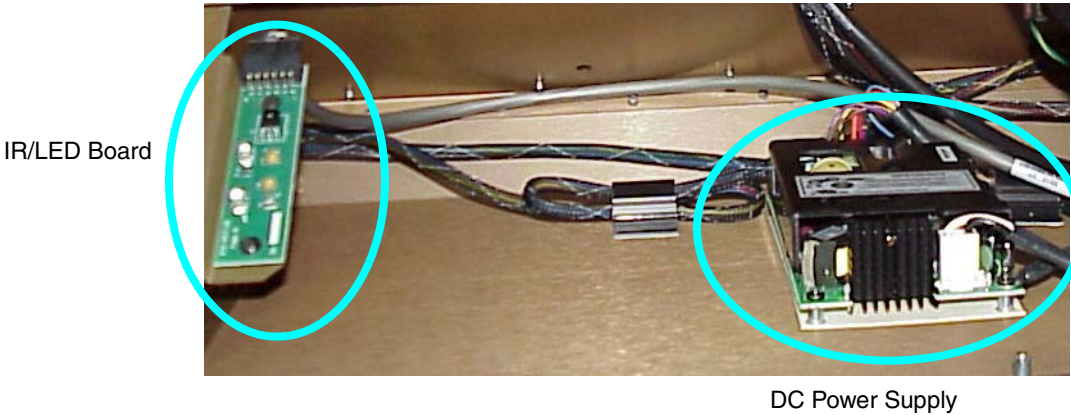
Task 1: Opening the Screen
Task 1.1: Gain Access: Lift Light Shield
Task 1.1.4 Gain Access: Remove DC Power Supply Panel

11 Lift the DC Power Supply Panel up and toward the front.



12 Close the Electronics Module door.

13 Lift and latch the light shield.
The DC Power Supply cavity is exposed.



Where to go from here	
Remove/Replace DC Power Supply	97
Remove/Replace IR/LED Board	99
Remove/Replace AC Power Switch.	100
When you have completed the tasks, return here	

14 Replace the DC Power Supply Panel.

a Slide the DC Power Supply Panel below the Light Shield (you may need to lift the Light Shield slightly) and below the Electronics Module door.

Note: Make sure the mounting tab on the DC Power Supply Panel that fits in the Electronics Module area is above the plate that holds the power switch and plug receptacles.

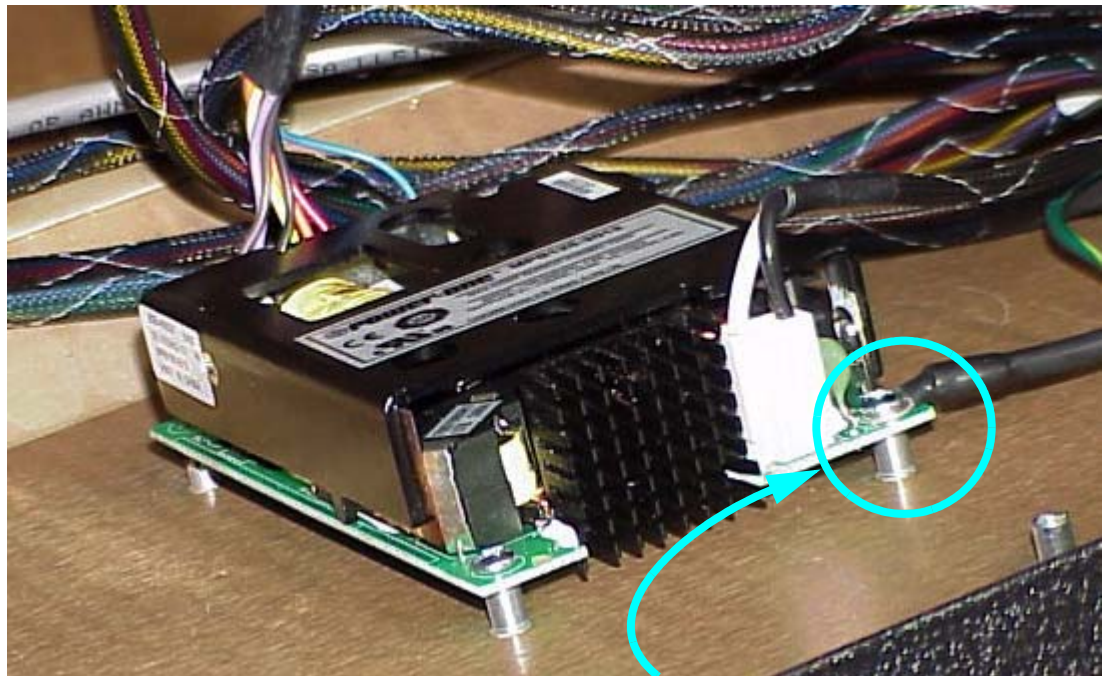
b Secure the panel with the four screws you removed earlier.

15 Return to *Task 1.1 Gain Access: Lift Light Shield* on page 82.

1.1.4.1 Remove/Replace DC Power Supply

Note: You may choose to reverse the order of steps **1** through **4** by removing the cables from the power supply before removing the power supply from the mounting posts.

1 Remove the two mounting screws on the front edge. Note that the front right mounting screw also secures the grounding wire.



Note: Grounding wire is attached to front right mounting screw

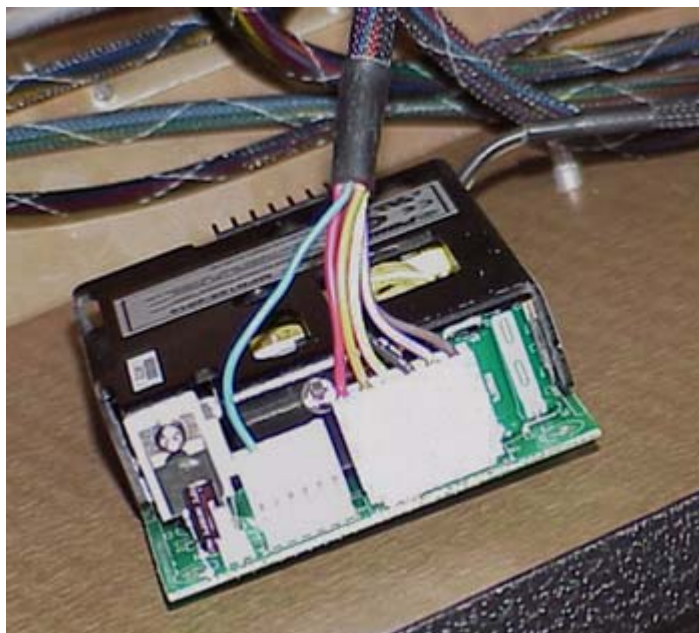
Task 1: Opening the Screen

Task 1.1: Gain Access: Lift Light Shield

Task 1.1.4 Gain Access: Remove DC Power Supply Panel

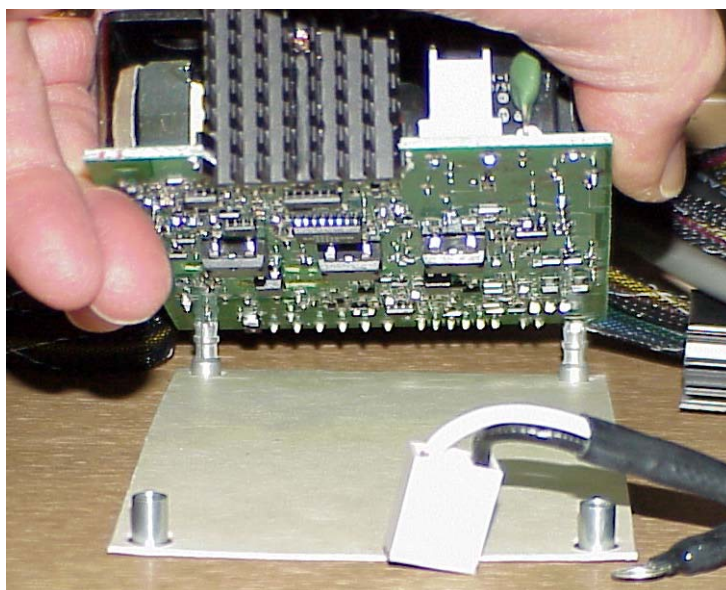
Task 1.1.4.1: Remove/Replace DC Power Supply

- 2 Remove the two cables at the rear of the DC Power Supply.



Note: In this photo, the DC Power Supply is turned around to make it easier to see the connectors. Therefore, for this photo, directions are listed for both the actual orientation when in the unit (and the orientation in the photo illustration).

- a The connector on the left (in the photo above, the connector on the right) has two separate safety latches that must be released before removing the cable.
 - b The connector on the right (in the photo above, the connector on the left) does not have a catch. Since it has only one cable, we recommend you detach the cable by pulling on the connector, not the wire.
- 3 Remove the power cable at the front of the DC Power Supply.
- 4 Remove the old DC Power Supply board by lifting it off the rear snap-mount posts.



Note: Be sure to leave the Nomex protective shielding in place

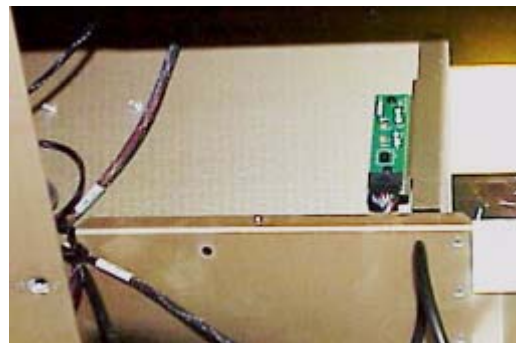
- 5 Remove the new DC Power Supply from its packaging.
- 6 Reattach the cables.
- 7 Install the new DC Power Supply board onto the two rear snap-mount posts, and insert and tighten the four screws for the new DC Power Supply. Be sure to reconnect the grounding wire to the front right corner of the power supply board.
- 8 Return to *Task 1.1.4 Gain Access: Remove DC Power Supply Panel* on page 95.

1.1.4.2 Remove/Replace IR/LED Board

- 1 Remove the two screws securing the IR/LED board.

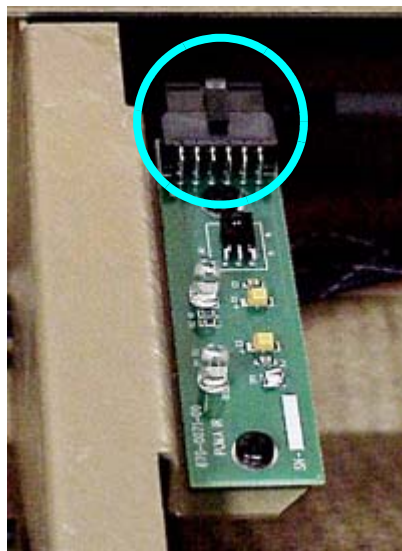


IR/LED Board viewed from the front



IR/LED Board viewed from the rear

- 2 Disconnect the cable at the rear of the IR/LED board.



- 3 Remove the new IR/LED Board from its packaging.
- 4 Connect the cable to the rear of the new board.

Task 1: Opening the Screen

Task 1.1: Gain Access: Lift Light Shield

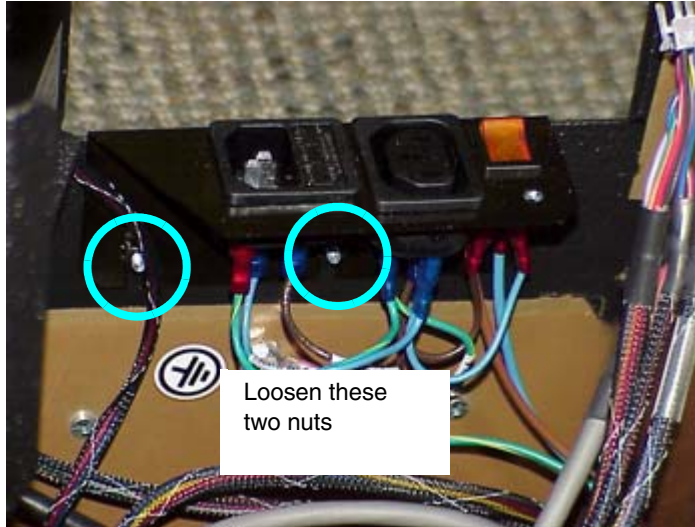
Task 1.1.4 Gain Access: Remove DC Power Supply Panel

Task 1.1.4.3: Remove/Replace AC Power Switch

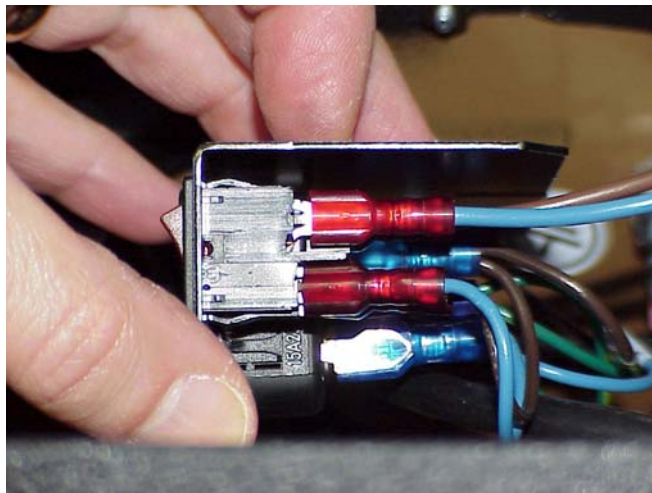
- 5 Secure the board onto the mounting posts with the screws you removed earlier.
- 6 Return to *Task 1.1.4 Gain Access: Remove DC Power Supply Panel* on page 95.

1.1.4.3 Remove/Replace AC Power Switch

- 1 Remove AC Power-in module by loosening (but not removing) the two securing nuts.

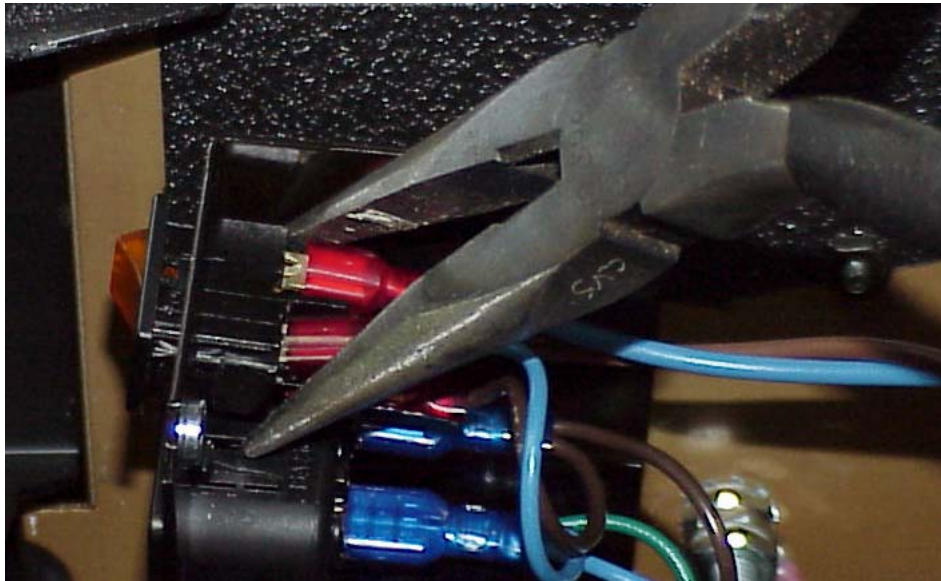


- 2 Slide the module up.
- 3 Turn the module partway over to expose the bottom of the module at the switch end.



- 4 Remove the power cables, noting the locations for each wire: Blue to the right of the switch, black to the front left, brown to the rear left.

- 5 Using a pair of needle-nose pliers, depress the catches on either side of the switch.



- 6 Slide the switch out of the opening.
- 7 Insert the new switch firmly into the opening and depress until the latches secure the switch in the module.
- 8 Reconnect the cables: Blue to the right of the switch, black to the front left, brown to the rear left.
- 9 Slide the module back onto the mounting studs and tighten the securing nuts.
- 10 Return to *Task 1.1.4 Gain Access: Remove DC Power Supply Panel* on page 95.

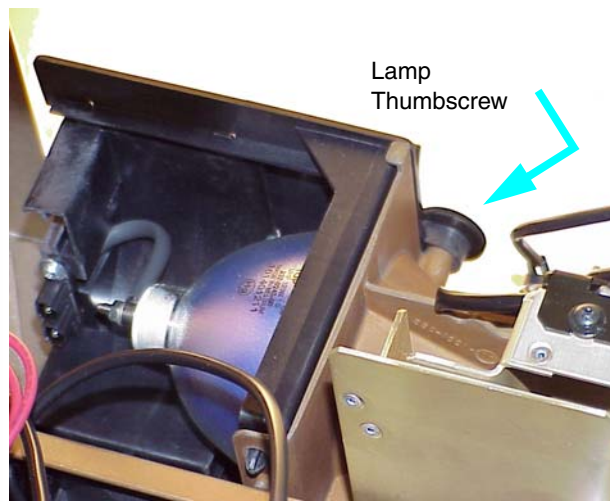
Task 1: Opening the Screen

Task 1.1: Gain Access: Lift Light Shield

Task 1.1.5 Remove/Replace Lamp

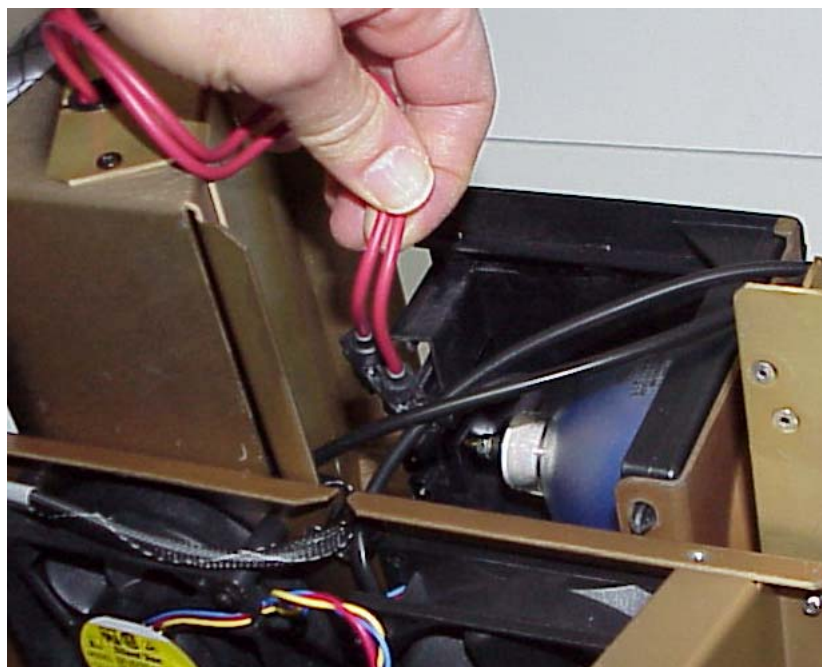
1.1.5 Remove/Replace Lamp

- 1 Using the remote control, turn off the lamp and allow the cooling fans to stop (approximately 2 minutes) before proceeding.
- 2 Open the screen (*Task 1 Opening the Screen* on page 78).
- 3 Power down the unit and remove the power cord (for detailed instructions, see *Task 1.2 Gain Access: Open Electronics Module Door* on page 111).
- 4 Lift the light shield (*Task 1.1 Gain Access: Lift Light Shield* on page 82).
- 5 Loosen the lamp thumbscrew (located on the rear side of the lamp housing) that secures the lamp. This can be done from the front, but you may find it easier to replace lamps from the rear.



Lamp in place

- 6 Disconnect the red lamp power cable.



- 7 Remove the old lamp. Push the lamp towards the rear of the display to disengage the locator pins.



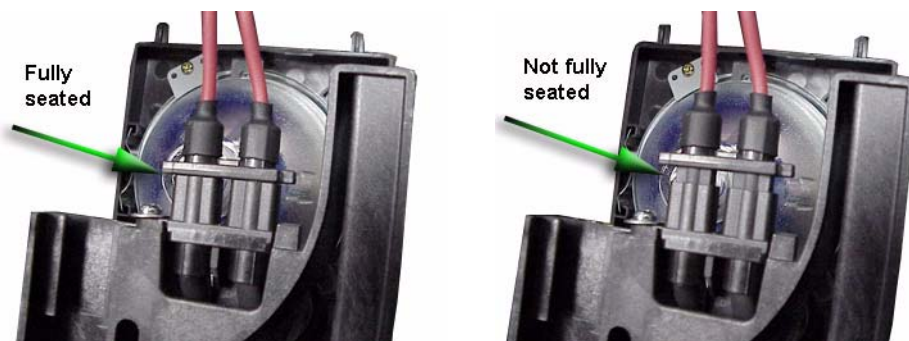
- 8 Remove the new lamp from its packaging and plug the red power cable into the new lamp.

Task 1: Opening the Screen

Task 1.1: Gain Access: Lift Light Shield

Task 1.1.5 Remove/Replace Lamp

Caution: Ensure that the lamp cable is fully seated.



9 Insert the new lamp in the lamp housing

Note the alignment pins on the lamp that fit into the holes on the side of the lamp housing opposite the thumb screw. If the pins are not fully seated in the alignment holes, you will not be able to tighten the securing thumbscrew.

10 Tighten the thumbscrew.

This can be done from the front, but you may find it much easier to do from the rear.

Caution: Do not over tighten the thumbscrew. The thumbscrew needs to be snug. When the thumbscrew is hard to turn, turn it no further.

Resetting Lamp Hours

When you put in a new lamp, reset the time counter for that lamp. Although this is not a necessary step, if you are keeping track of lamp hours for each lamp, don't forget to reset the lamp hours counter.

Resetting lamp hours is for your information and your records only. It is not required for operation or for warranty replacement.

11 Replace the AC power cord and turn on AC power.

12 Close the electronics module door.

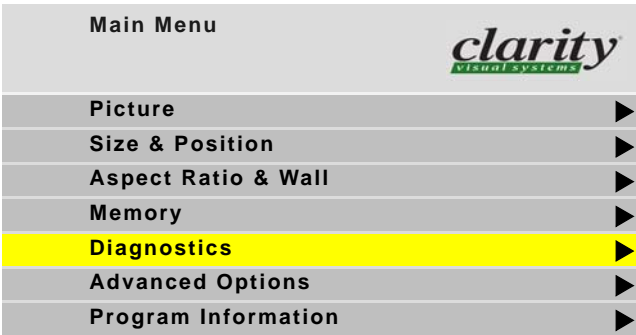
13 Lower the light shield.

14 Replace the screen (*Task 2 Replacing Screens* on page 125).

15 On the remote press ON.

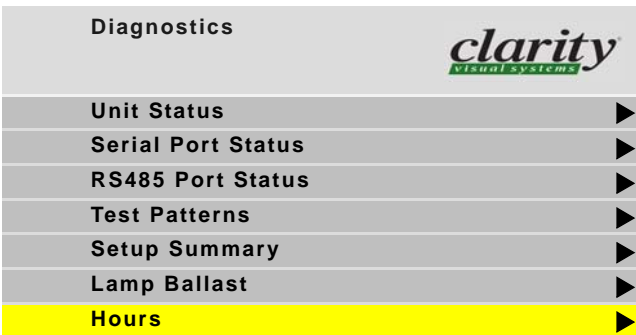
16 When the lamp lights, on the remote, press MENU.

17 Select Diagnostics and press ENTER

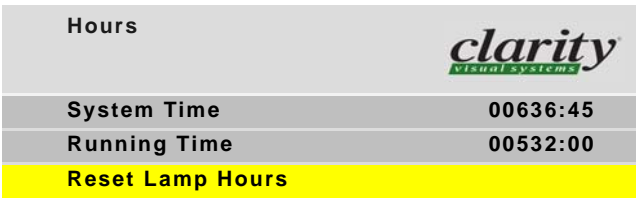


The Diagnostics menu displays.

18 Select Hours and press ENTER.

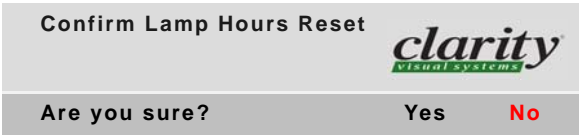


The Hours menu displays.



19 Press ENTER.

The Confirm Lamp Hours Reset menu displays.

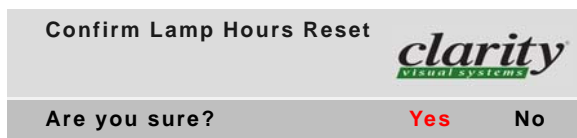


Task 1: Opening the Screen

Task 1.1: Gain Access: Lift Light Shield

Task 1.1.5 Remove/Replace Lamp

- 20** Press the left arrow key to select **Yes** and press ENTER.

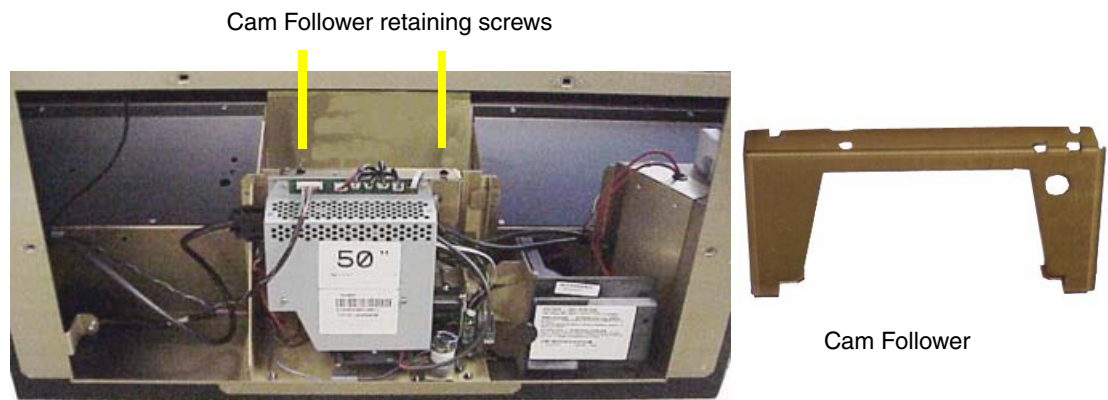


Final Step After Replacing Lamps

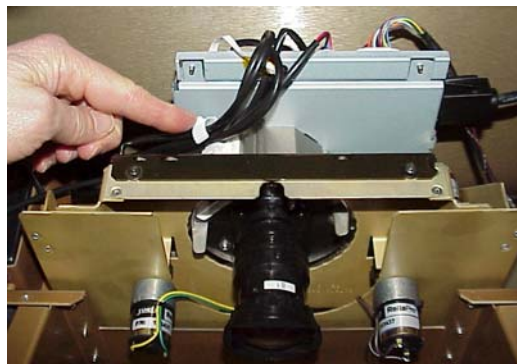
When you replace lamps, you must color balance the units that received new lamps to ensure a uniform image across the wall. Use the procedure described in the Margay User Guide, but only color balance the units with new lamps after resetting to defaults.

1.1.6 Remove/Replace Optical Engine

- 1 Using the remote control, turn off the lamp and allow the cooling fans to stop (approximately 2 minutes) before proceeding.
- 2 Open the screen (*Task 1 Opening the Screen* on page 78).
- 3 Power down the unit and remove the power cord (for detailed instructions, see *Task 1.2 Gain Access: Open Electronics Module Door* on page 111).
- 4 Lift the light shield (*Task 1.1 Gain Access: Lift Light Shield* on page 82).
- 5 Remove the Cam Follower:
 - a Loosen the two retaining screws 4 or 5 turns (and don't remove them) that secure the Cam Follower.



- b Push the Cam Follower to the rear, tilt the top to the rear, and lift it off the top of the Optical Engine.
- 6 Release the cable clamp on front side of Optical Engine to allow some slack in the cables. This makes the cables easier to remove.



- 7 Disconnect the following cables from the following locations:

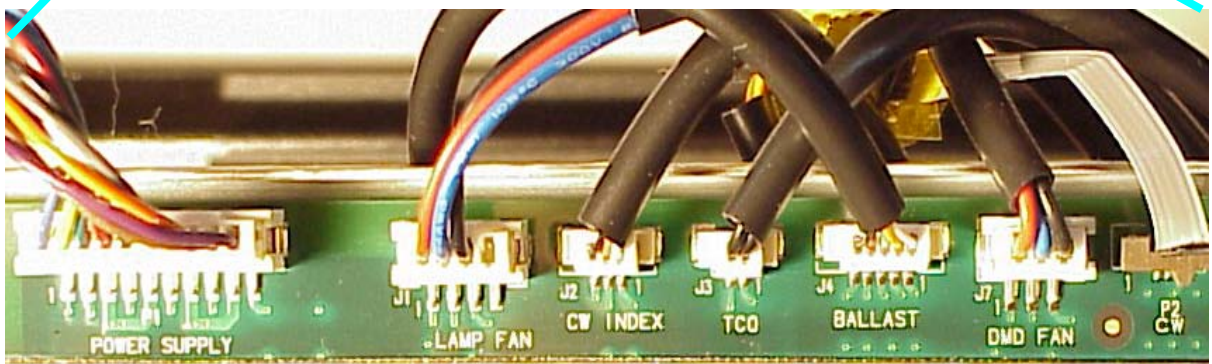
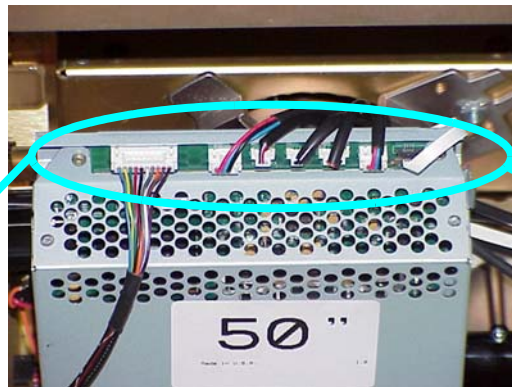
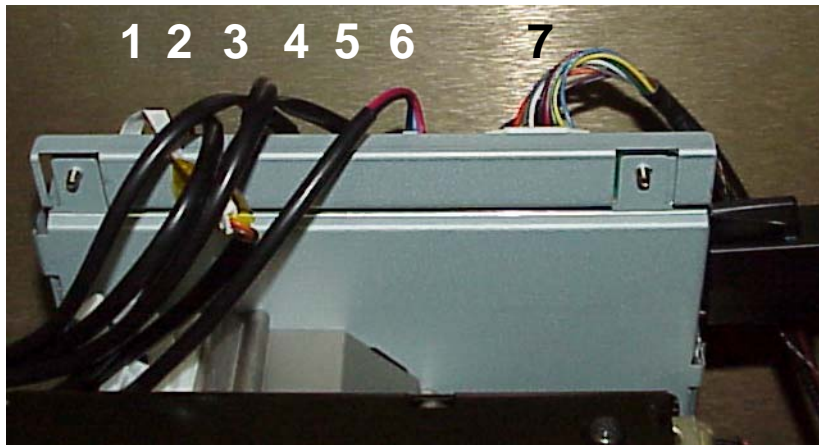
Task 1: Opening the Screen

Task 1.1: Gain Access: Lift Light Shield

Task 1.1.6 Remove/Replace Optical Engine

a On top of the Optical Engine, remove the following cables:

- Power Supply cable (cable 7 in pictures below)
- Lamp Fan cable (cable 6 in pictures below)
- Ballast cable (cable 3 in pictures below)



Power Supply

Lamp Fan

Ballast

7

6

5

4

3

2

1

- b** On right side of Optical Engine, remove:
- HDMI cable (remove the keeper first then detach the cable; don't lose the keeper!).

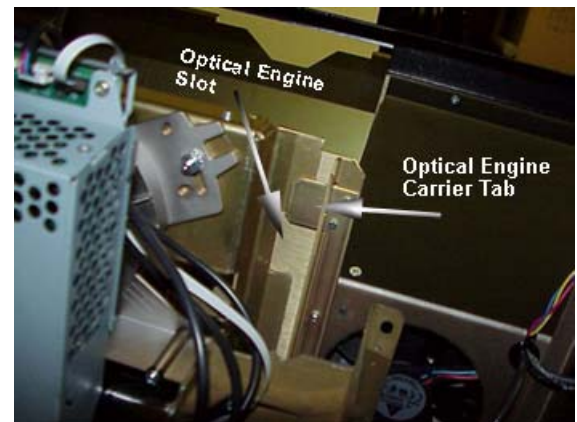
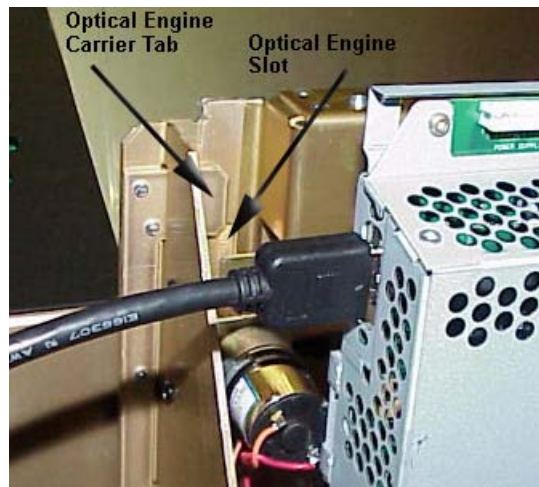


Keeper latched



Keeper unlatched

- 8** Slide the Optical Engine halfway up out of the Alignment Chassis.
- 9** Tilt the top of the Optical Engine toward the rear and lift it up and out of the Alignment Chassis the rest of the way.
- 10** Replace new Optical Engine in the Alignment Chassis. Slide the Optical Engine Slot in front of the Optical Engine Carrier Tab.



- 11** Tighten the Cam Follower screws you loosened earlier.
- 12** Reconnect the four cables you removed earlier:
 - a** On top of the Optical Engine, connect:
 - Power Supply cable
 - Lamp cable
 - Ballast cable

Task 1: Opening the Screen

Task 1.1: Gain Access: Lift Light Shield

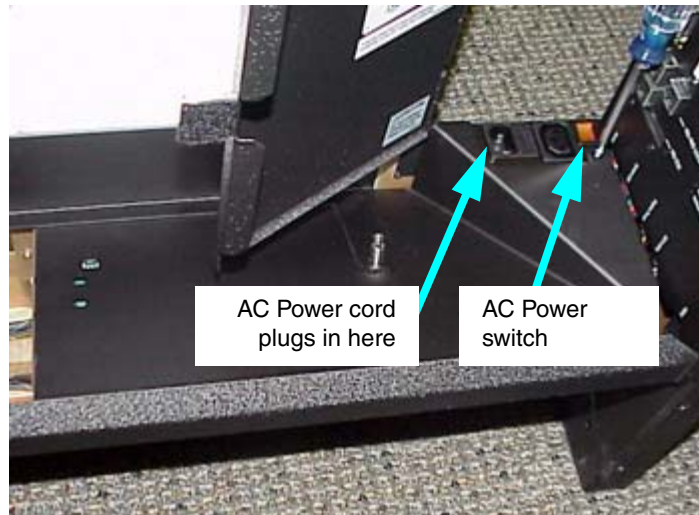
Task 1.1.6 Remove/Replace Optical Engine

- b** On right side of Optical Engine, connect:
- HDMI cable and snap the keeper in place

13 Return to *Task 1.1 Gain Access: Lift Light Shield* on page 82.

1.2 Gain Access: Open Electronics Module Door

- 1 Using the remote control, turn off the lamp and allow the cooling fans to stop (approximately 2 minutes) before proceeding.
- 2 Open the screen (*Task 1 Opening the Screen* on page 78).
- 3 Open the electronics module door.



- 4 Turn off the AC power switch and remove the power cord.

Where to go from here	
Servicing the Electronics Module	112
When you have completed the tasks, return here	

- 5 Replace the AC power cord and turn on AC power.
- 6 Close the electronics module door.
- 7 Replace the screen (*Task 2 Replacing Screens* on page 125).

Task 1: Opening the Screen

Task 1.2: Gain Access: Open Electronics Module Door

Task 1.2.1 Servicing the Electronics Module

1.2.1 Servicing the Electronics Module

The following procedures require you to use electrostatic discharge safety measures such as a grounding wrist strap and grounded work area.

1.2.1.1 Remove Electronics Module

- 1 Loosen captive screws at the top of the Electronics Module



- 2 Carefully lift the Electronics Module up and part way out of the chassis.

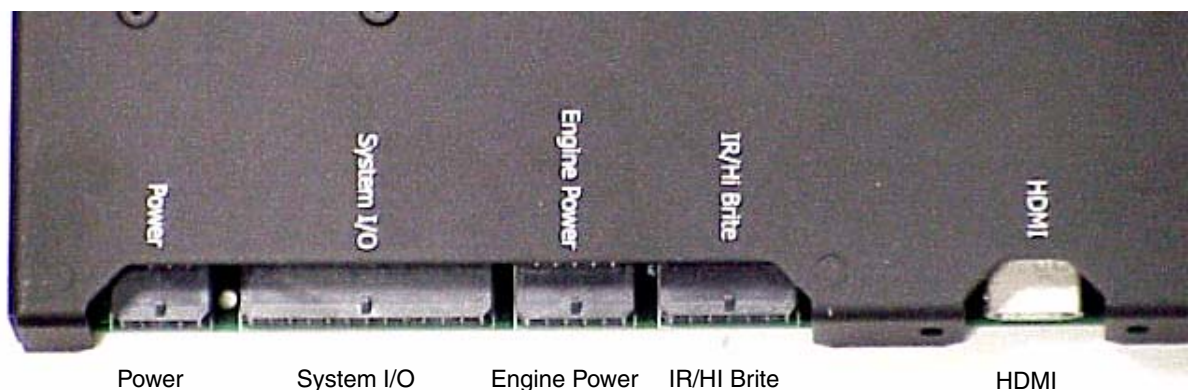


Note: If you are planning only to install or remove a Video Input Module (VIM), you may choose to leave the cables attached and only *partially* remove the Electronics Module from the chassis. If you choose this path, skip to *Task 1.2.1.1.1 Installing/Removing the Video Input Module* on page 114.

- 3 Disconnect the five cables at the bottom of the Electronics Module.

Note: Be careful not to let the cables fall back in chassis; you may wish to use masking tape to bind them together so they don't fall back into the chassis.

Note: The cables are uniquely keyed to fit into only the corresponding connector.

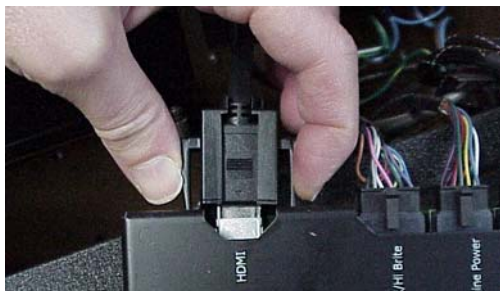


Task 1: Opening the Screen

Task 1.2: Gain Access: Open Electronics Module Door

Task 1.2.1 Servicing the Electronics Module

- a To disconnect the HDMI cable, remove the keeper on the HDMI cable; don't lose the keeper!



Then, disconnect the HDMI cable.

- 4 Put the Electronics Module on a grounding mat to perform service on it.

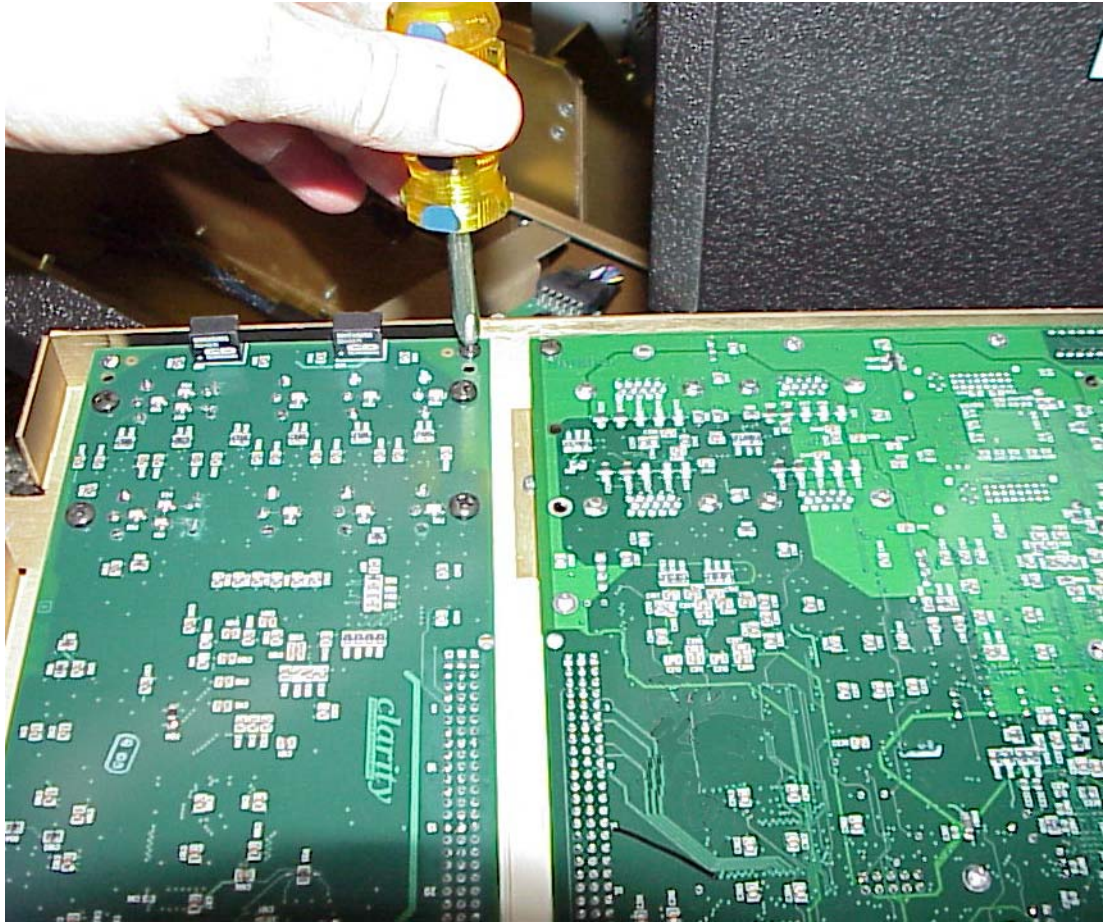
1.2.1.1.1 Installing/Removing the Video Input Module

- 1 Gently turn over the Electronics Module to expose the Video Input Module (VIM) install area (one or two green circuit boards are visible).



- 2 If you are installing a VIM in a Margay that did not have a VIM, skip to step 5.

- 3 Using a #1 screwdriver, remove the four screws in the corners of the VIM.

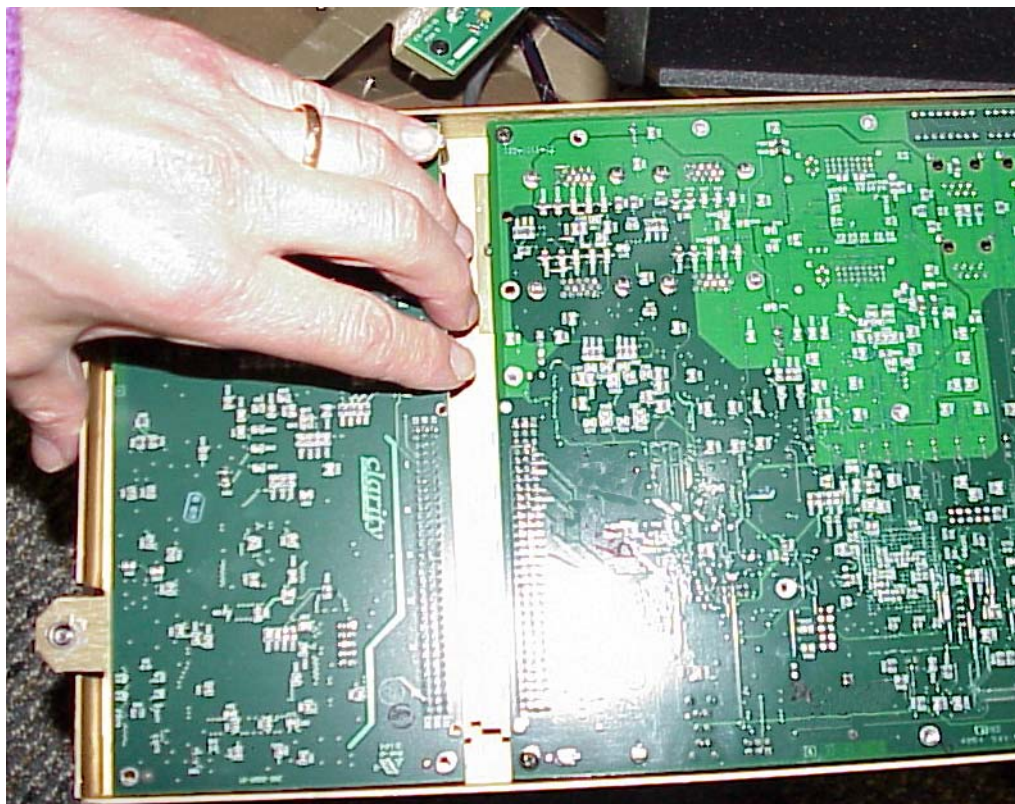


Task 1: Opening the Screen

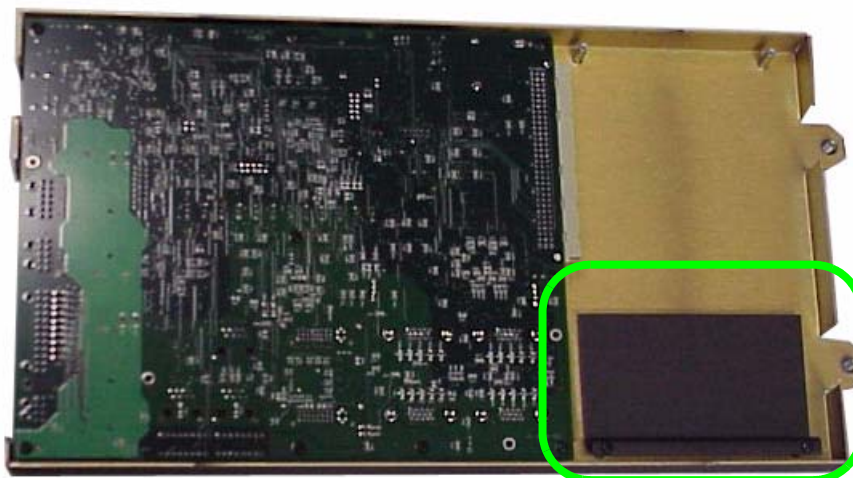
Task 1.2: Gain Access: Open Electronics Module Door

Task 1.2.1 Servicing the Electronics Module

- 4 Pull the VIM out of the connectors and skip to step 6.



- 5 If you are installing a VIM in an Electronics Module that did not have a VIM, remove the connector cover on the Electronics Module.



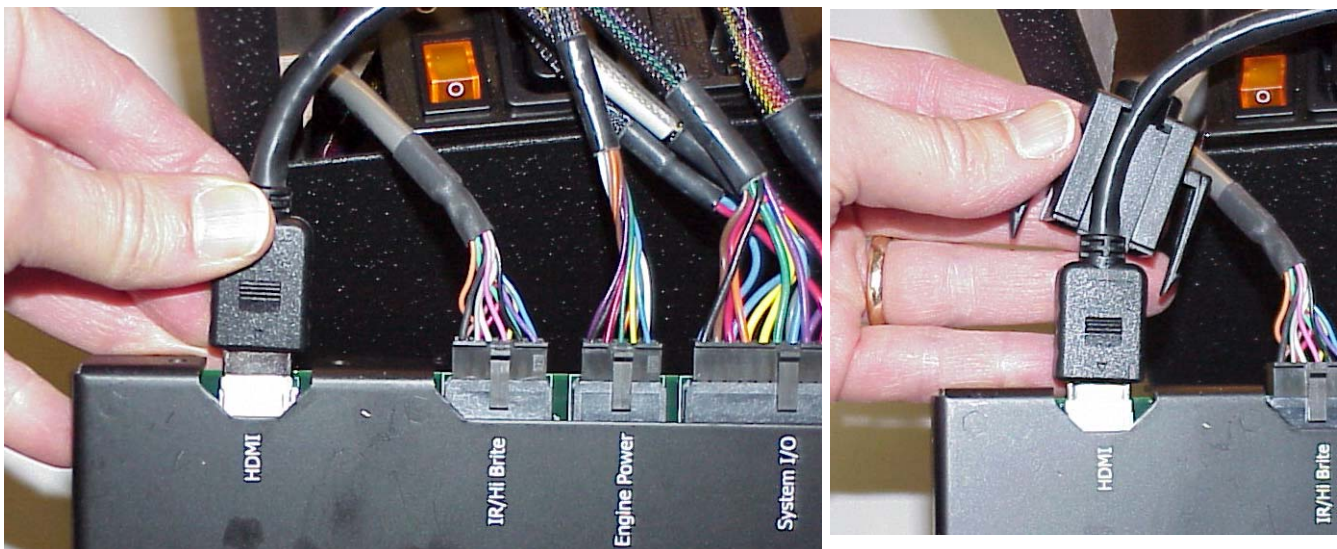
Remove the two screws that secure the connector cover

- 6 Remove the new VIM from the packaging

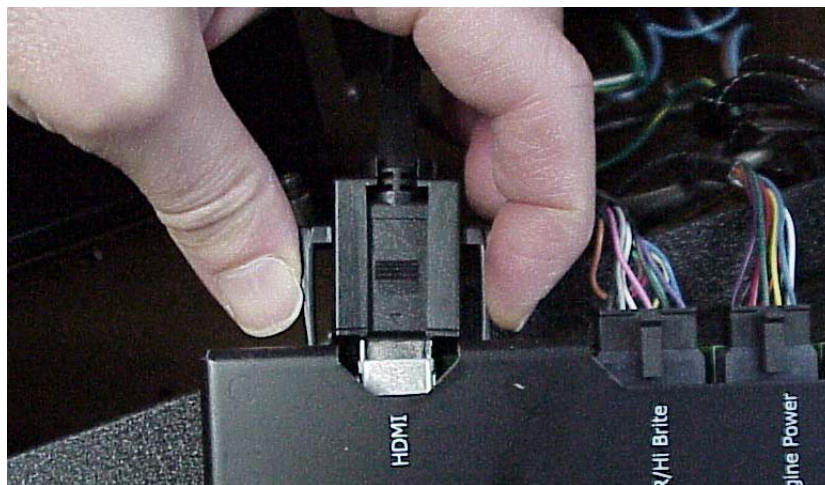
- 7 Position the VIM so the RCA connectors point down (the green circuit board faces up) and align the connectors on the VIM with the socket on the Electronics Module.
- 8 Insert the VIM into the connector. You can be sure the VIM is well seated when the mounting holes in the corners align with the mounting posts on the Electronics Module.
- 9 Secure the VIM with the four screws.

1.2.1.2 Replace Electronics Module

- 1 Reconnect the five cables you disconnected.
 - a After you reconnect the HDMI cable, slide the black snap collar onto the wire.



- b Slide the collar pins into the locking holes on the Electronics Module to hold the HDMI cable in place.



Task 1: Opening the Screen**Task 1.2: Gain Access: Open Electronics Module Door****Task 1.2.1 Servicing the Electronics Module****Task 1.2.1.2: Replace Electronics Module**

- 2** Carefully insert the cable end of Electronics Module into cavity to the right of the DC Power Supply Panel.
- 3** As you push the cable end of the Electronics Module into the cavity, align the Electronics Module mounting screws with the screw holes and tighten the captive screws.

1.3 Remove/Replace Large Mirror

You'll need a 7/16" socket wrench to complete this task.

Note: Removing a mirror is done only when you are directed to do so by Clarity Customer Support or the mirror has broken.

Note: The steps in this procedure require full access to the rear of the unit. If the unit is in a tower or wall with other units on top of it, **those units must be removed** before you can service the unit.

- 1 Using the remote control, turn off the lamp and allow the cooling fans to stop (approximately 2 minutes) before proceeding.
- 2 Open the screen (*Task 1 Opening the Screen*).
- 3 Power down the unit and remove the power cord (*Task 1.2 Gain Access: Open Electronics Module Door* on page 111).

Note: These steps assume you are not saving the mirror. If you plan to reuse the mirror, do not allow the mirror to hang unsupported when you remove any of the bolts.

Caution: Be sure to have two people perform these steps to avoid dropping the mirror and to prevent injuries.

Remove the old mirror

- 4 From the rear of the Margay, loosen the bottom mounting nut, and count the turns as you remove it. When you replace it use the same number of turns. This will make it less likely that you'll have to fuss with the bolts to align the mirror

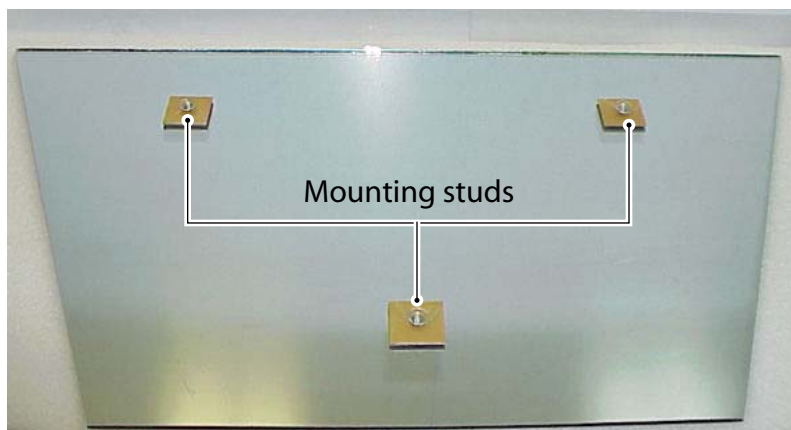
Note: The crimped nuts prevent them from turning accidentally, so they may be very hard to turn.

- 5 Before you remove the nut completely, make sure a second person can support the mirror when the nut is removed.
- 6 Remove the nut.
The mirror swings free a bit.

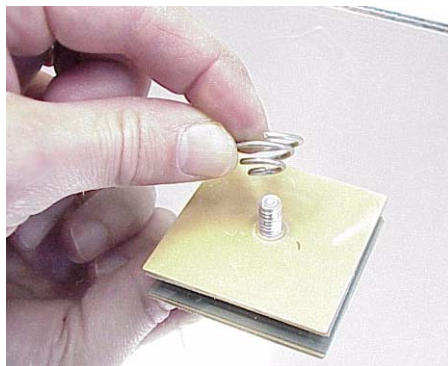
Caution: Support the mirror until all the mounting nuts are removed.

- 7 Still supporting the mirror, remove the two top mounting nuts, and count the turns as you remove them. When you replace them use the same number of turns.
- 8 When all the nuts are removed, remove the mirror from the unit. Avoid scratching the mirror if you plan to save it.

- 9 Place the old mirror face down on a soft, flat, level, non-scratching surface.



- 10 Remove the springs from the mounting studs.



Prepare the new mirror for installation

- 11 Place the new mirror face down on a soft, flat, level, and non-scratching surface.
- 12 With the mounting studs on the back of the mirror pointing up, place the springs, small side down, on the mounting studs.
- 13 While holding the mirror in the unit, align the mounting studs with the chassis mounting holes.
- Note:** We have found it easier to align the bottom center first.
- 14 Place the nut on the bottom stud and tighten it partially. Take care to support the mirror in place until all the nuts are installed to prevent torquing the mirror and possibly cracking it. Make sure you count the turns when you replace the nut.
- 15 Align the top two mounting studs with their chassis mounting holes. Tighten the nuts part way. Make sure you count the turns when you replace the nuts.



- 16 When all three nuts are holding the mounting studs in place, you may remove your support from the mirror.
- 17 Tighten the nuts until the stud is almost flush with the top of the nut. You may need to tighten or loosen the nuts when you align the image.
- 18 Remove the protective film.

The mirror is covered with a protective film. This should be removed before you align the image. Be careful: pulling the film off generates static electricity. It isn't dangerous, but it is annoying. It might be advisable to place one hand on the metal chassis while removing the film. It will reduce static shock.
- 19 If the mirror has any smudges or residual adhesive, clean the mirror (*Task 3 Cleaning Mirrors, Lenses, and Screens*).

Align the image

Follow the alignment procedures explained in the Margay User Guide. If the image is keystoneed after alignment, you may need to adjust the large mirror (*Task 1.4 Adjusting the Large Mirror for Keystoneed Images* on page 122).

1.4 Adjusting the Large Mirror for Keystoned Images

Keystone pictures have this shape  or this shape . They are wider on one edge than on the opposite edge. It is not a common problem, but if after replacing the mirror your display has this problem, do this:

- 1 Turn on the internal Geometry Pattern from the Test Pattern menu.
 - a Press MISC three times to open the Test Pattern menu.
 - b Choose Geometry Pattern at the bottom of the list and press ENTER.
- 2 Compare the width of the top of the pattern to the width at the bottom. If these two are the same within one or two pixels, leave it alone.
- 3 Compare the height on the left side with the height on the right. If these two are the same within one or two pixels, leave it alone.

Caution: Do not try these adjustments unless you are sure they need to be done. This is not something you want to adjust ‘just to see what happens.’ These three nuts were crimped to prevent them from turning accidentally, so they may be very hard to start.

Note: Do not confuse image rotation with keystone. If you think the pattern is rotated, choose Left edge or Right edge and press + or – to cause one of the sides to go up or down.

If you have keystoneing

To adjust a keystoned picture on a display in a wall, remove other displays on top of it. The adjustment nuts are on the back of the upper section, behind the large mirror. (If the problem is with a unit in the top row of a wall, you can adjust the display in place.) Behind the large mirror, as seen from the rear of the display, you will see three nylock nuts, two toward the top and one at the middle of the bottom.

- In the diagram in the table below, the L and R nuts are labeled for the Left and Right sides as you see them from the rear.
- In the table of the effect of these adjustments, ‘left’ and ‘right’ mean the picture as viewed from the front.

When adjusting the top two nuts together, turn them the same amount.

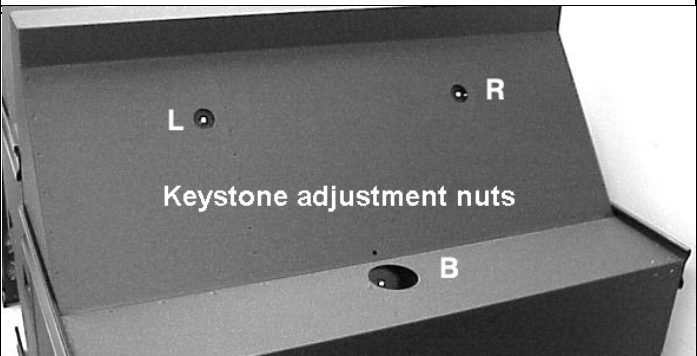
To adjust for one side too tall or too short, be very careful. You should turn the L or R nut, then turn the B nut the same direction, but only half as much. This is a very tricky adjustment.

To understand how these adjustments work, keep in mind that the image is expanding as it leaves the last lens. The farther it travels, the larger the image becomes. When you pull the mirror away from the screen, the image has to travel a bit farther, so it is larger on the screen. Tightening a nuts pulls the mirror away from the screen.



Three crimped nuts for adjusting keystone problems.

Effect of Adjusting Large Mirror Nuts

Location	Tighten	Loosen	
L & R together	Top wider Image moves up	Top narrower Image moves down	
B	Bottom wider Image moves down	Bottom narrower Image moves up	
L & ½B	Right side taller Image moves right	Right side shorter Image moves left	
R & ½B	Left side taller Image moves left	Left side shorter Image moves right	

1.5 Removing and Replacing the Small Mirror

Note: Removing a mirror is done only when you are directed to do so by Clarity Customer Support or the mirror has broken.

- 1 Using the remote control, turn off the lamp and allow the cooling fans to stop (approximately 2 minutes) before proceeding.
- 2 Open the screen (*Task 1 Opening the Screen*).
- 3 Power down the unit and remove the power cord (for detailed instructions, see *Task 1.2 Gain Access: Open Electronics Module Door* on page 111).
- 4 Remove the small mirror.
The small mirror is affixed with double-sided adhesive tape. Slow steady pressure will release it. If not, break the mirror and remove the shards carefully.
- 5 Clean the mounting surface and remove all old adhesive with an adhesive-removing solvent such as Goof Off™ or GooGone™.

Caution: Don't allow the solvent to drip inside the Margay; it could dissolve wiring insulation!

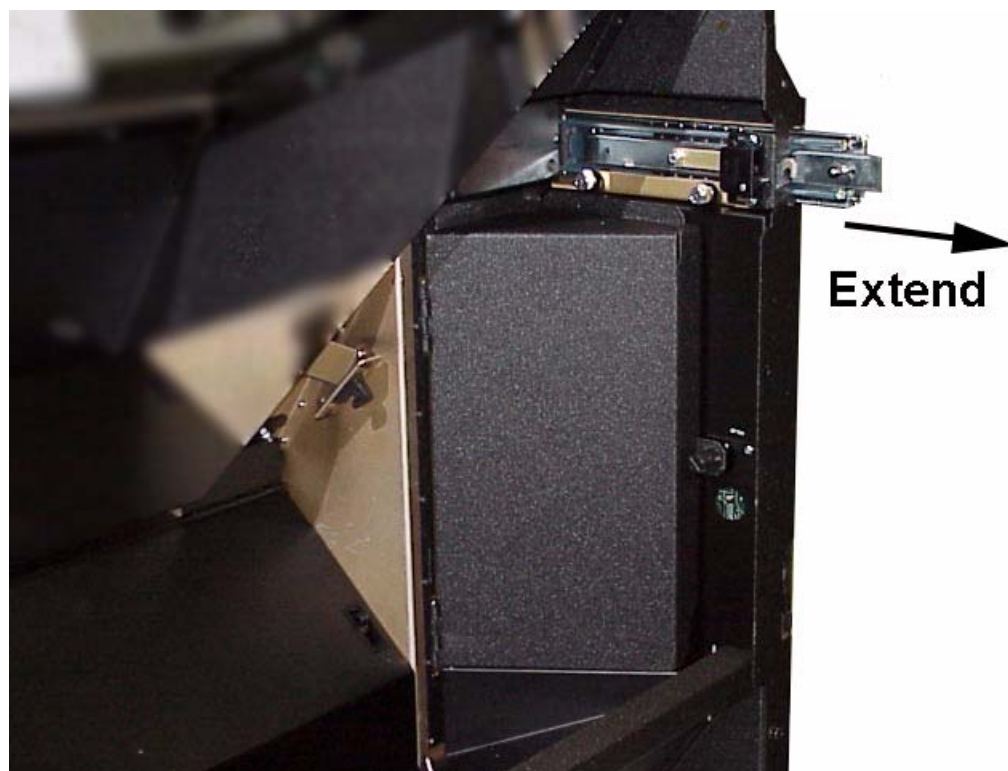
- 6 Replace with new mirror.

Note: The replacement small mirror should have double-sided adhesive tape.

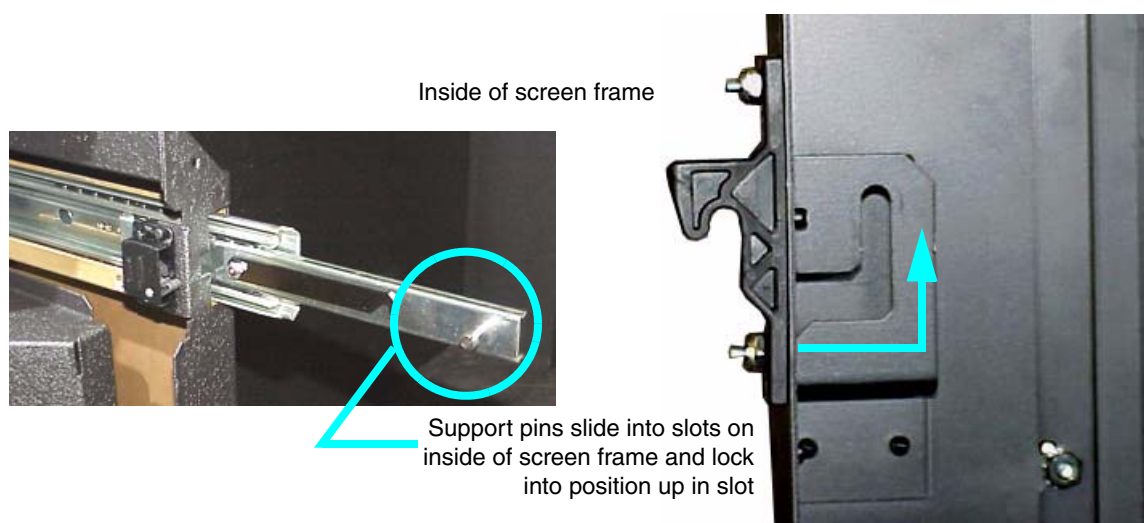
- a Before you remove the backing from the double-sided adhesive tape, position the small mirror over the mounting location a few times to familiarize yourself with positioning it.
 - b Remove the backing.
 - c Affix the new mirror.
- 7 If the mirror has any smudges or residual adhesive, clean the mirror using the steps shown in *Task 3 Cleaning Mirrors, Lenses, and Screens*.

2 Replacing Screens

- 1 Start at the bottom row, and install the screen on the center unit. Make of note of which screen was which unit and install the matching screen on each unit.
- 2 Pull the support rails all the way out.



- 3 Hang the screen on the support pins.



- 4 Push the screen in until it latches.

- 5** Continue installing screens from the center out until you have installed the entire row.
- 6** Move to the next row up, and install a screen on the center unit.
- 7** Repeat steps **2** through **6** until all screens have been replaced.

3 Cleaning Mirrors, Lenses, and Screens

Note: This process is best done when you have completed all front-access service and you have replaced the screen(s).

Dirt is everywhere, and unless the displays you service are in a super-clean room, from time to time you will have to clean the screens, mirrors, and lenses of displays.

Cleaning products and how to use them

For mirrors and screens, a foam spray cleaner seems to work well. It is sold under different names in different parts of the world. It is available from many janitor supply companies or building maintenance supply companies. Ask for one of the following:

- Claire #50 glass cleaner, or
- Sprayway #50 glass cleaner

It is probably sold under a local name, but it all comes from one company. If you ask for either of the two names above (it is sold under both), you will get this cleaner under the local name.

This cleaner is good on glass (screens, lenses, mirrors) and acrylic (screens).

You may spray the cleaner on mirror, but do not spray cleaner directly on the screen. Instead, spray the cleaner on the cloth, then wipe the screen.

Caution: DO NOT spray liquid of any kind on the screen. It can drip down the screen and wick up between the layers. When liquid gets between the screen layers, it is impossible to remove, and the screen is ruined!

Caution: Whether the screen is glass or acrylic, don't lean on it. Don't let it get scratched. Protect it.

Wipe the mirror or screen gently with a lint-free cloth or lint-free paper (see Cloth below). Turn the cloth over to the dry side and continue wiping to take up the haze.

Other Cleaning Product Recommendations

Glass Wax™ is another good cleaner for mirrors and glass screens, but it does not work well on acrylic screens. It is a liquid in a can. You spread it on, let it dry, then wipe it off.

You may use any foaming glass cleaner that does not contain alcohol or ammonia.

Cloth to use

White cotton cloth is better for cleaning than colored cloth. The dyes in some colored cloth tend to make it less absorbent.

Paper towels tend to leave lint. A better paper towel for cleaning are shop towels. These lint free paper towels are generally available at electronic parts stores.

Cheesecloth is another good choice. This open-weave cotton material is light and absorbent.

Removing dry dust

Often the cleaning problem is just dust, not fingerprints or other oily dirt. If it's just dust, wiping with a dry cheesecloth or a dry shop towel will usually do the job.

Cleaning lenses

Clean lenses as you would the glass mirrors. However, because the lens is small, it is easier to spray the cleaner, if you use one, on the cloth, not the lens itself. For best results, you may choose to use a cleaning product designed specifically for cleaning optical glass.

Where is the dirt?

When you see dirt in the picture, you can sometimes tell where it is by its focus. Use a white test pattern to see the dirt most easily.

Small specs of dirt or dust that are in **very sharp focus** are on the screen itself.

If the dirt is in **soft focus**, it is probably a smudge on the large mirror.

Dirt on the output lens cannot be seen in the picture. However, that does not mean you should not clean this lens. Dirt here will reduce the brightness of the picture, but it won't show up as specs in the picture.

Rear-Access Maintenance and Service Procedures

Introduction

The procedures in this chapter are similar to those contained in “Front-Access Maintenance and Service Procedures” on page 77, but the actual steps and methods you’ll use may be different.

Note: Directions that refer to the right or left of the unit are for the unit itself when viewed from the front. Thus standing at the rear of the unit, the Electronics Module, power switch, and plug receptacle are on the rear right side of the unit, which is on your left.

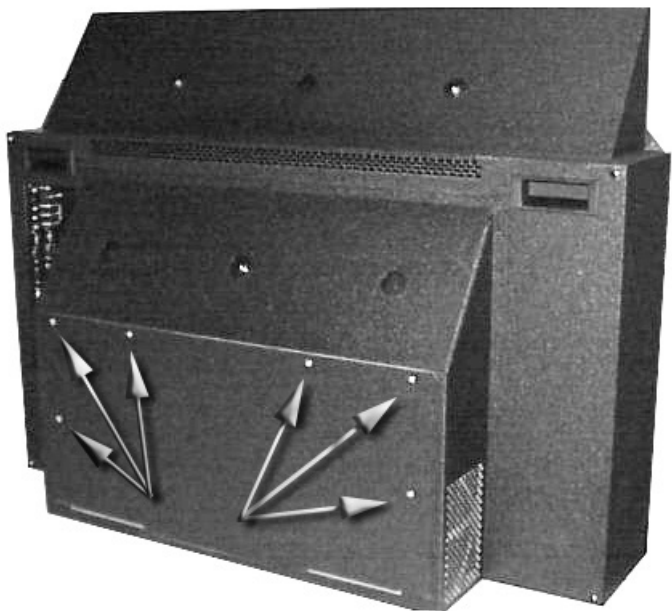
If you have a part under warranty or a part can be repaired under Clarity’s repair option, contact Clarity Customer Service. See Contact Clarity Customer Support on page 173.

Required Tools

- #1 and #2 Phillips screwdrivers, stubby #2 Phillips screwdriver
- 5/16" socket and ratchet handle or combination (box/open end) wrench
- 7/16" socket wrench or nut driver
- Needle-nose pliers

4 Gain Access: Remove Rear Panel

- 1 Using the remote control, turn off the lamp and allow the cooling fans to stop (approximately 2 minutes) before proceeding.
- 2 Power down the unit and remove the power cord.
- 3 Release the six quarter-turn fasteners that hold the Rear Panel in place.



- 4 Lift the Rear Panel up and off the rear of the Margay. Note the bottom-center tab that fits inside the Margay to hold the bottom edge in place.

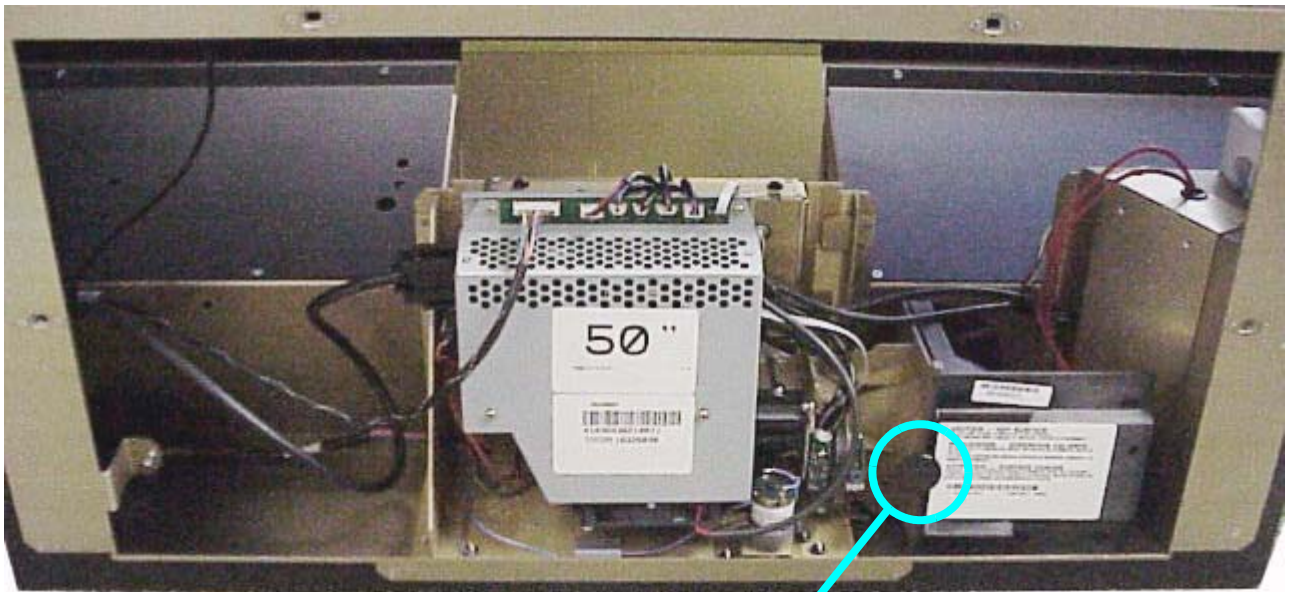
All the tasks in this manual are laid out hierarchically; that is tasks must be performed in the order presented. If you already know how to access specific components, you may go directly to those tasks.

Where to go from here	
Remove/Replace Lamp	131
Remove/Replace Lamp Ballast	135
Gain Access to interior of unit	140
When you have completed the tasks, return here	

- 5 Replace the Rear Panel (*Task 6 Replace the Rear Panel* on page 168).

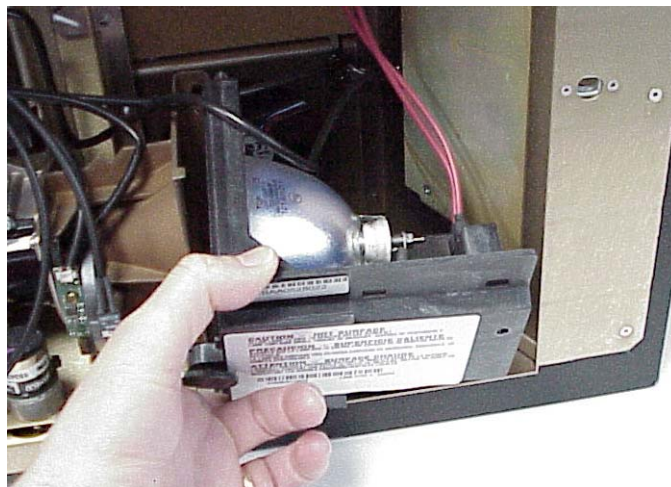
4.1 Remove/Replace Lamp

- 1 Using the remote control, turn off the lamp and allow the cooling fans to stop (approximately 2 minutes) before proceeding.
- 2 Power down the unit and remove the power cord.
- 3 Remove the Rear Panel (*Task 4 Gain Access: Remove Rear Panel* on page 130).
- 4 Loosen the thumbscrew (on the rear side of the lamp housing) that secures the lamp in the lamp housing.



Lamp Thumbscrew

- 5** Pull the lamp towards the rear, and remove it from the chassis.



Task 4: Gain Access: Remove Rear Panel

Task 4.1: Remove/Replace Lamp

- 6 Disconnect red lamp power cable.



- 7 Remove the new lamp from its packaging and plug the red power cable into the new lamp.

Caution: Ensure that the lamp cable is fully seated.



- 8 Insert the new lamp in the lamp housing.

Note the alignment pins that fit into the holes on the side of the lamp housing opposite the thumb screw. If the pins are not fully seated in the alignment holes, you will not be able to tighten the securing thumbscrew.

- 9 Tighten the thumbscrew.

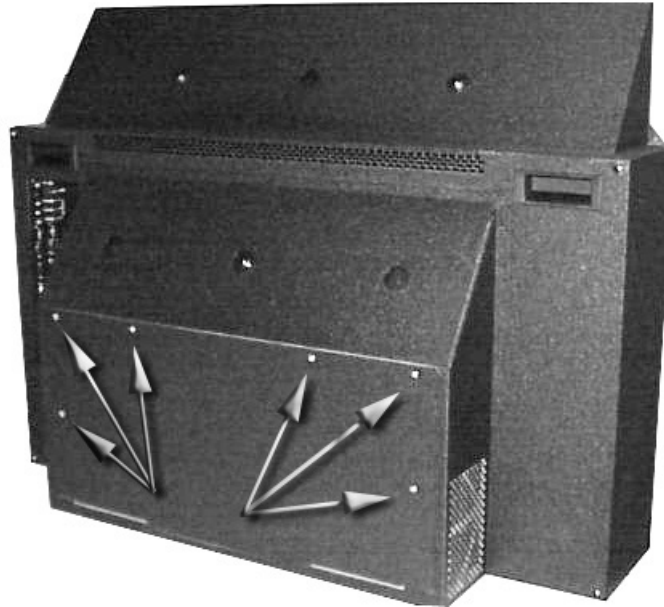
Note: Do not over tighten the thumbscrew. The thumbscrew needs to be snug. When the thumbscrew is hard to turn, turn it no further.

Resetting Lamp Hours

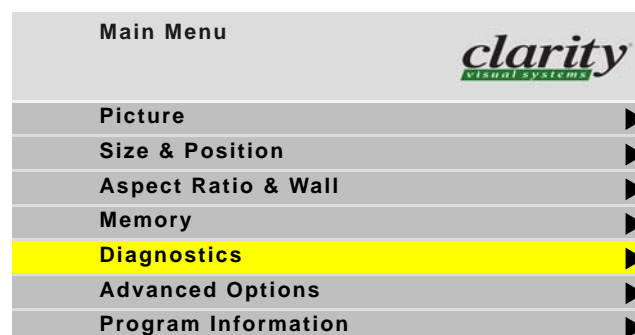
When you put in a new lamp, reset the time counter for that lamp. Although this is not a necessary step, if you are keeping track of lamp hours for each lamp, don't forget to reset the lamp hours counter.

Why reset lamp hours? This is for your information and your records only. It is not required for operation or for warranty replacement.

- 10 Replace the rear panel and tighten the six quarter-turn fasteners that hold the Rear Panel in place.



- 11 Replace the AC power cord and turn on AC power.
- 12 Aim the remote at the screen and press ON.
- 13 When the lamp lights, on the remote, press MENU.
- 14 Select **Diagnostics** and press ENTER

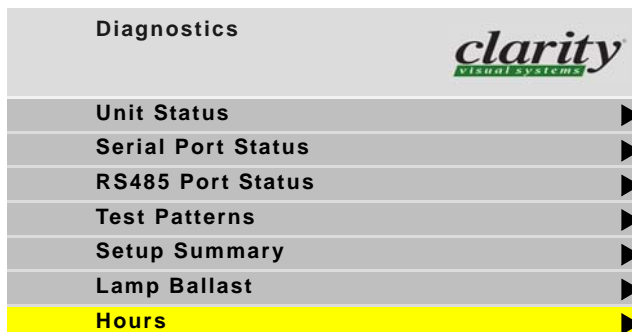


The Diagnostics menu displays.

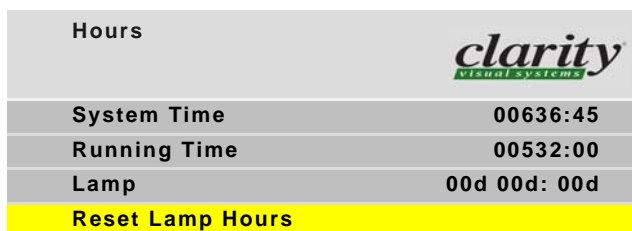
Task 4: Gain Access: Remove Rear Panel

Task 4.1: Remove/Replace Lamp

- 15 Select Hours and press ENTER.

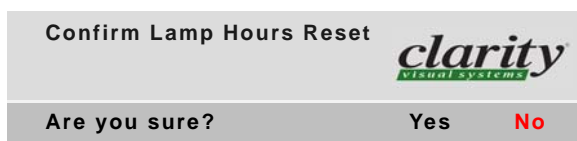


The Hours menu displays.

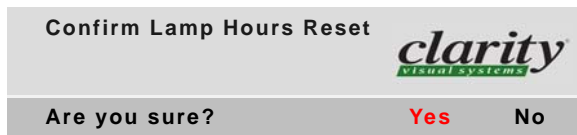


- 16 Press ENTER.

The Confirm Lamp Hours Reset menu displays.



- 17 Press the left arrow key to select Yes and press ENTER.



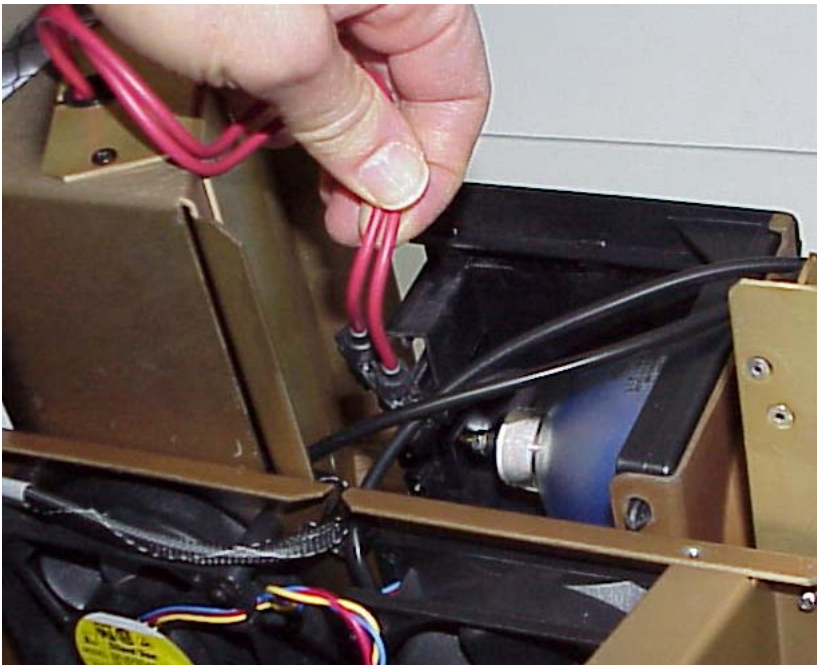
Final Steps After Replacing Lamps

When you replace lamps, you must color balance the units that received new lamps to ensure a uniform image across the wall. Use the procedure described in the Margay User Guide, but only color balance the units with new lamps after resetting to defaults.

4.2 Remove/Replace Lamp Ballast

Note: For this procedure, you'll need a stubby #2 screwdriver.

- 1 Using the remote control, turn off the lamp and allow the cooling fans to stop (approximately 2 minutes) before proceeding.
- 2 Power down the unit and remove the power cord.
- 3 Remove the Rear Panel (*Task 4 Gain Access: Remove Rear Panel* on page 130).
- 4 Lift the light shield (*Task 4.3 Gain Access to interior of unit* on page 140) to provide room for a screwdriver.
- 5 Detach the red Lamp power cable.



Removing the Lamp power cable from the front



Removing the Lamp power cable from the rear

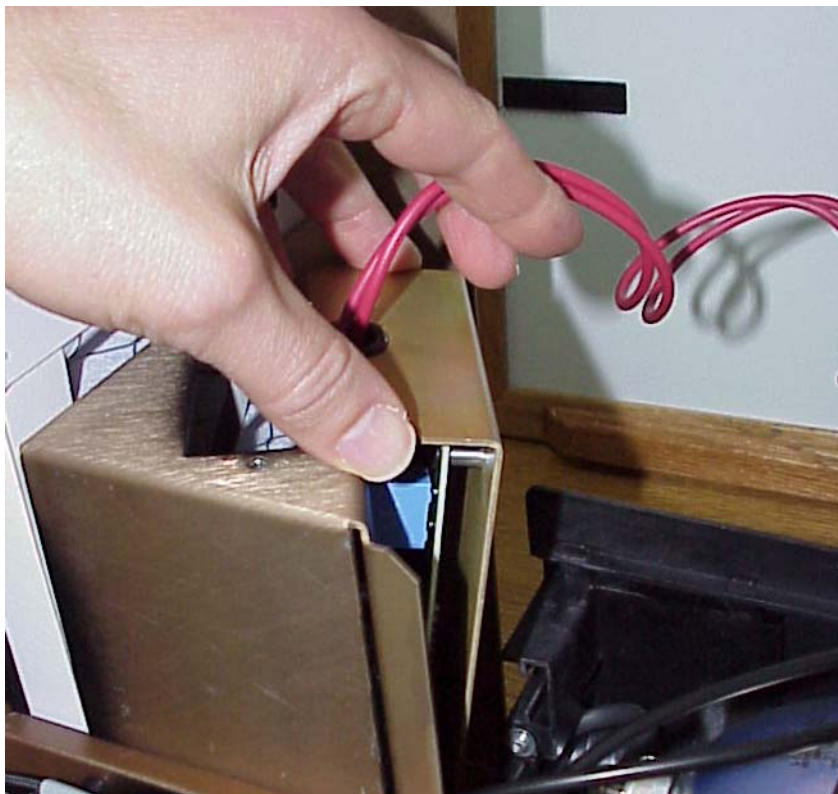
- 6 Remove the two securing screws at the top of the Ballast.



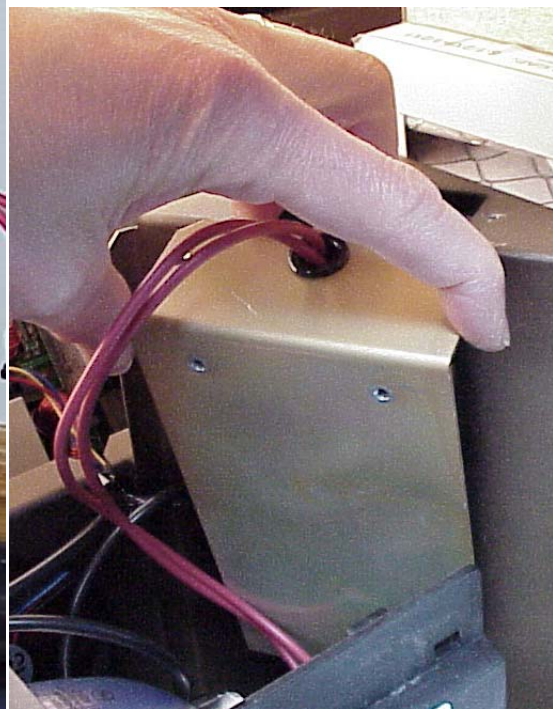
Removing the Ballast securing screws from the rear

Removing the Ballast
securing screws from
the front

- 7 Lift up the Ballast and tilt it toward the rear of the unit.



Removing the Ballast from the front

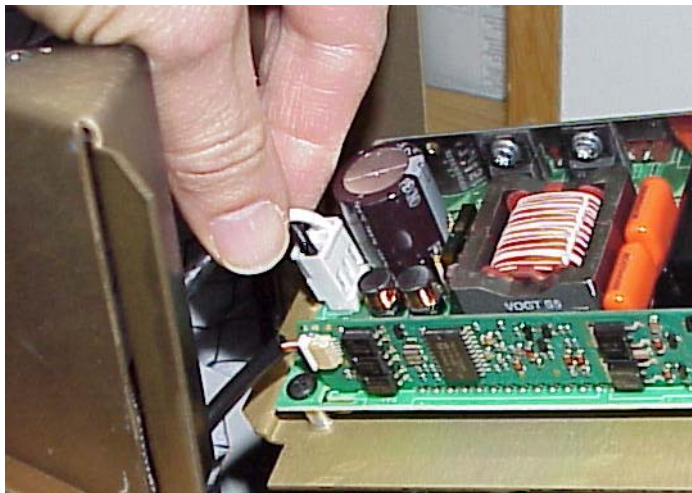


Removing the Ballast from the rear

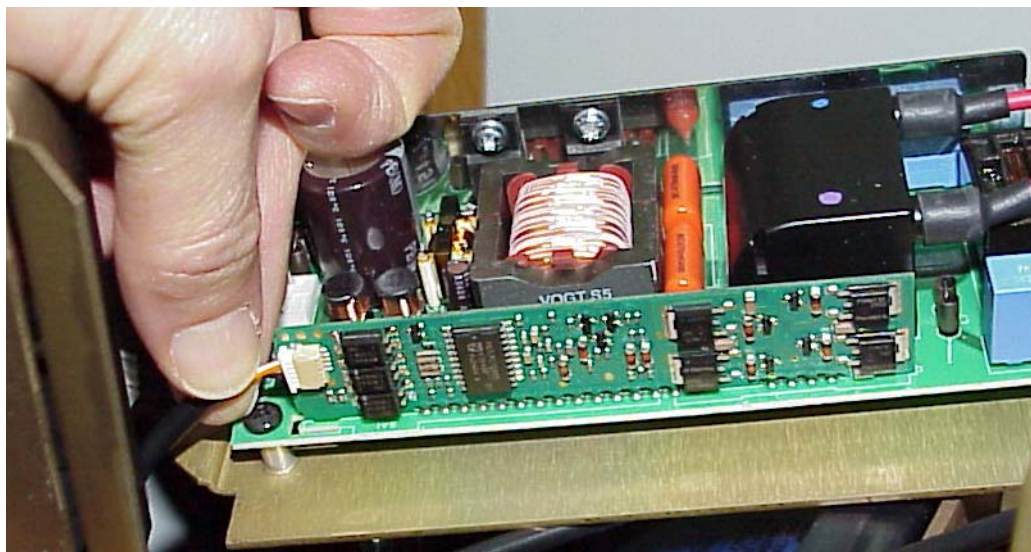
- 8 Partially remove the Ballast from the enclosure.

9 Detach the two cables leading to the ballast from the Ballast enclosure:

- Power cable

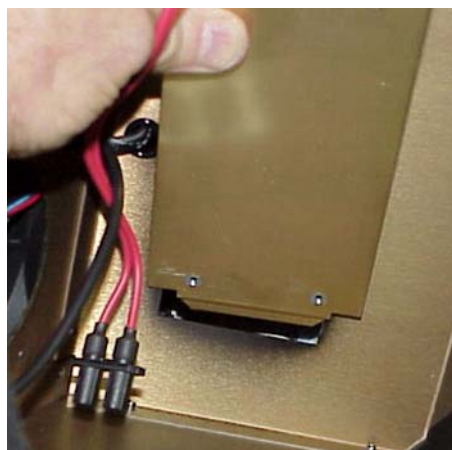


- Ballast sense and control cable

**10** Remove the old Ballast.**11** Remove the new Ballast from its packaging.**12** Connect the cables leading from the enclosure to the new Ballast.

- Ballast sense and control cable
- Power cable

- 13** Insert the tongue at bottom of the Ballast into the slot of the enclosure.



- 14** Tilt the Ballast into the enclosure.



- 15** Insert and tighten the two screws.

- 16** Reattach the Lamp cable.

Task 4: Gain Access: Remove Rear Panel
Task 4.3: Gain Access to interior of unit

4.3 Gain Access to interior of unit

- 1 Using the remote control, turn off the lamp and allow the cooling fans to stop (approximately 2 minutes) before proceeding.
- 2 Power down the unit and remove the power cord.
- 3 Remove the Rear Panel (*Task 4 Gain Access: Remove Rear Panel* on page 130).
- 4 Open the Electronics Module Door.
- 5 Loosen the Light Shield screw.
- 6 Close the Electronics Module Door.
- 7 Push up the Light Shield and latch it in place.

Where to go from here	
Removing the Optical Engine	143
Change Air Filter	147
Gain Access: Remove High-Voltage Power Supply Panel. . . .	148
Gain Access: Remove/Replace DC Power Supply Panel	154
When you have completed the tasks, return here	

- 8 Close the Electronics Module Door.
- 9 Pull the Light Shield free of the latch and pull it down into the closed position.
- 10 Open the Electronics Module Door and tighten the Light Shield screw.
- 11 Close the Electronics Module Door.
- 12 Replace the power cord.

4.3.1 Adjusting the Optical Engine On Its Carrier

Note: This procedure assumes that you moved the Optical Engine using the adjustment motors but could not move the image far enough.

To perform this task, you must do one of two things:

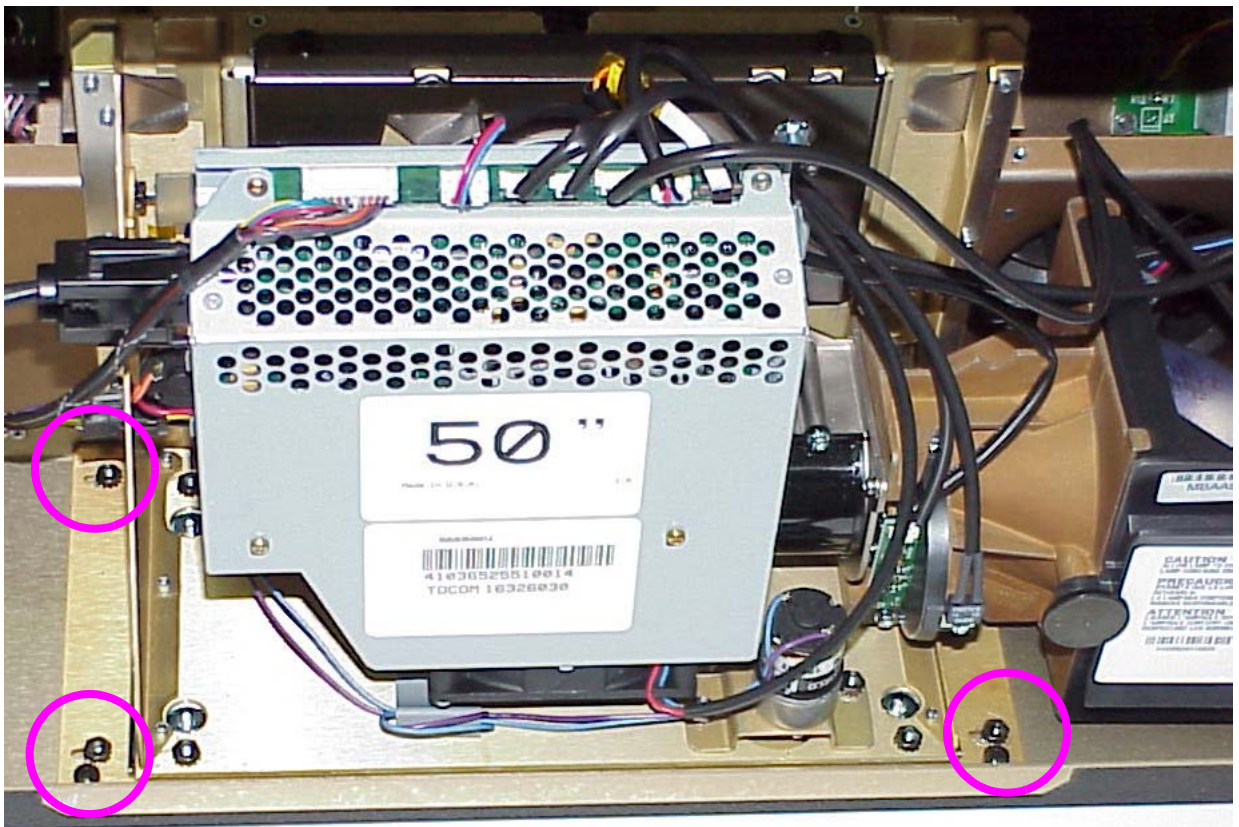
- remove and replace the back panel, then cycle AC power to clear the interlock lamp shut down error each time you replace the panel
- leave the back panel off and put a piece of tape over the interlock switch to keep it closed while the back panel is off the unit

WARNING! If you choose to leave the back panel off the unit while performing these adjustments, you must wear some IR-protective eyewear. Also remember to remove the tape over the interlock after you have completed this task.

- 1 With the image displayed on the screen, use the motor adjustments to move the image to the center of the range of motion.

This allows you to do gross manual adjustment of the image by moving the carrier, and fine image adjustment using the motors.

- 2 Loosen the locknuts at each of the four corners of the alignment chassis.



Note: The engine carrier locknuts in the front right corner is not visible in this picture. Be sure to loosen it before attempting to move the carrier

Task 4: Gain Access: Remove Rear Panel

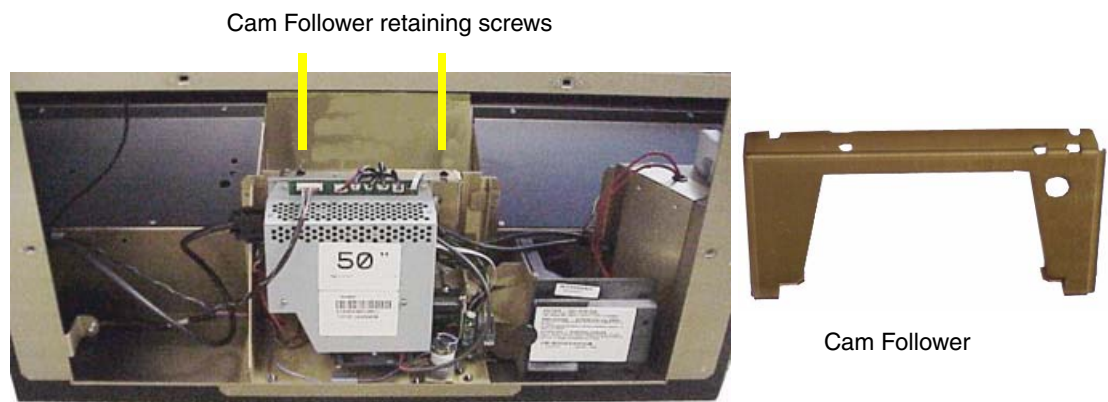
Task 4.3: Gain Access to interior of unit

Task 4.3.1 Adjusting the Optical Engine On Its Carrier

- 3 Move the carrier to the left or right enough to move the image to the approximate center of the screen.
- 4 Tighten the locknuts.
- 5 Use the image positioning motors to position the image precisely.

4.3.2 Removing the Optical Engine

- 1 Using the remote control, turn off the lamp and allow the cooling fans to stop (approximately 2 minutes) before proceeding.
- 2 Power down the unit and remove the power cord.
- 3 Lift the light shield (*Task 4.3 Gain Access to interior of unit on page 140*).
- 4 Remove the Cam Follower:
 - a Loosen the two retaining screws on top of the Cam Follower 4 or 5 turns (and don't remove them).



- b Push the Cam Follower back to the rear, tilt the top to the rear, and lift it off the top of the Optical Engine.
- 5 Release the cable clamp on front side of Optical Engine to allow some slack in the cables. This makes the cables easier to remove.
- 6 Disconnect the following cables from the following locations:

Task 4: Gain Access: Remove Rear Panel

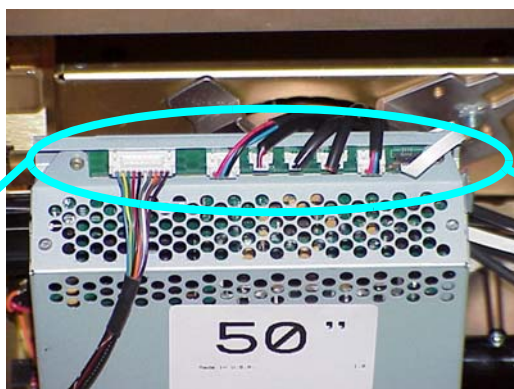
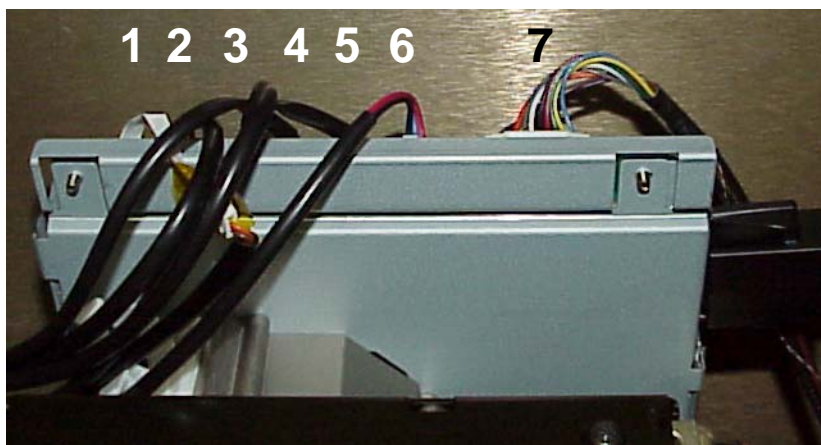
Task 4.3: Gain Access to interior of unit

Task 4.3.2 Removing the Optical Engine

Task :

a On top of the Optical Engine, remove the following cables:

- Power Supply cable (cable 7 in pictures below)
- Lamp Fan cable (cable 6 in pictures below)
- Ballast cable (cable 3 in pictures below)



Power Supply

Lamp Fan

Ballast

7

6

5

4

3

2

1

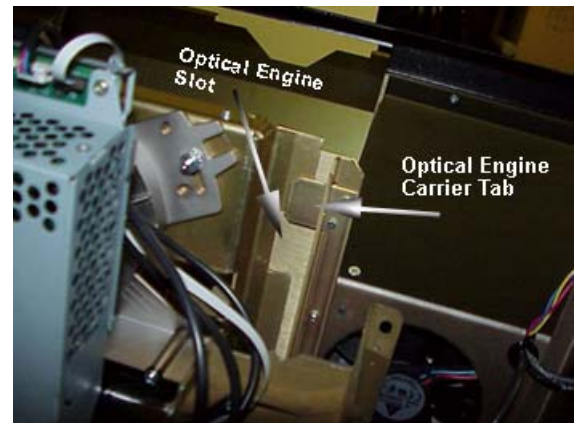
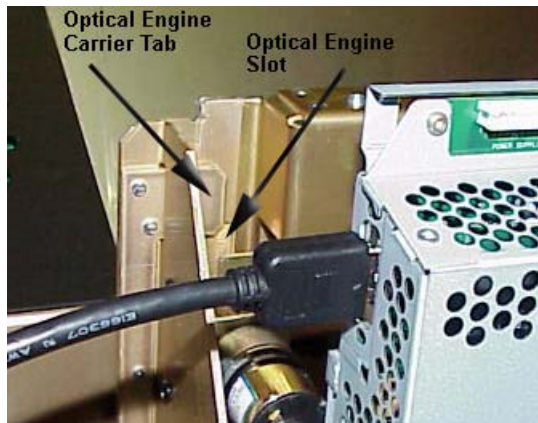
- b** On right side of Optical Engine, remove:
 - HDMI cable (remove the keeper first, then detach the cable; don't lose the keeper!).



- 7** Slide the Optical Engine halfway up out of the Alignment Chassis.
- 8** Tilt the top of the Optical Engine toward the rear and lift it up and out of the Alignment Chassis the rest of the way.

4.3.2.1 Replacing the Optical Engine

- 1** Before you install the new Optical Engine or replace the old one, clean the lens (*Task 3 Cleaning Mirrors, Lenses, and Screens* on page 127).
- 2** Replace new Optical Engine in the Alignment Chassis. Slide the Optical Engine Slot in front of the Optical Engine Carrier Tab.



- 3** Tighten the Cam Follower screws you loosened earlier.
- 4** Reconnect the four cables you removed earlier:
 - a** On top of the Optical Engine, connect:
 - Power Supply cable
 - Lamp cable
 - Ballast cable

Task 4: Gain Access: Remove Rear Panel

Task 4.3: Gain Access to interior of unit

Task 4.3.2 Removing the Optical Engine

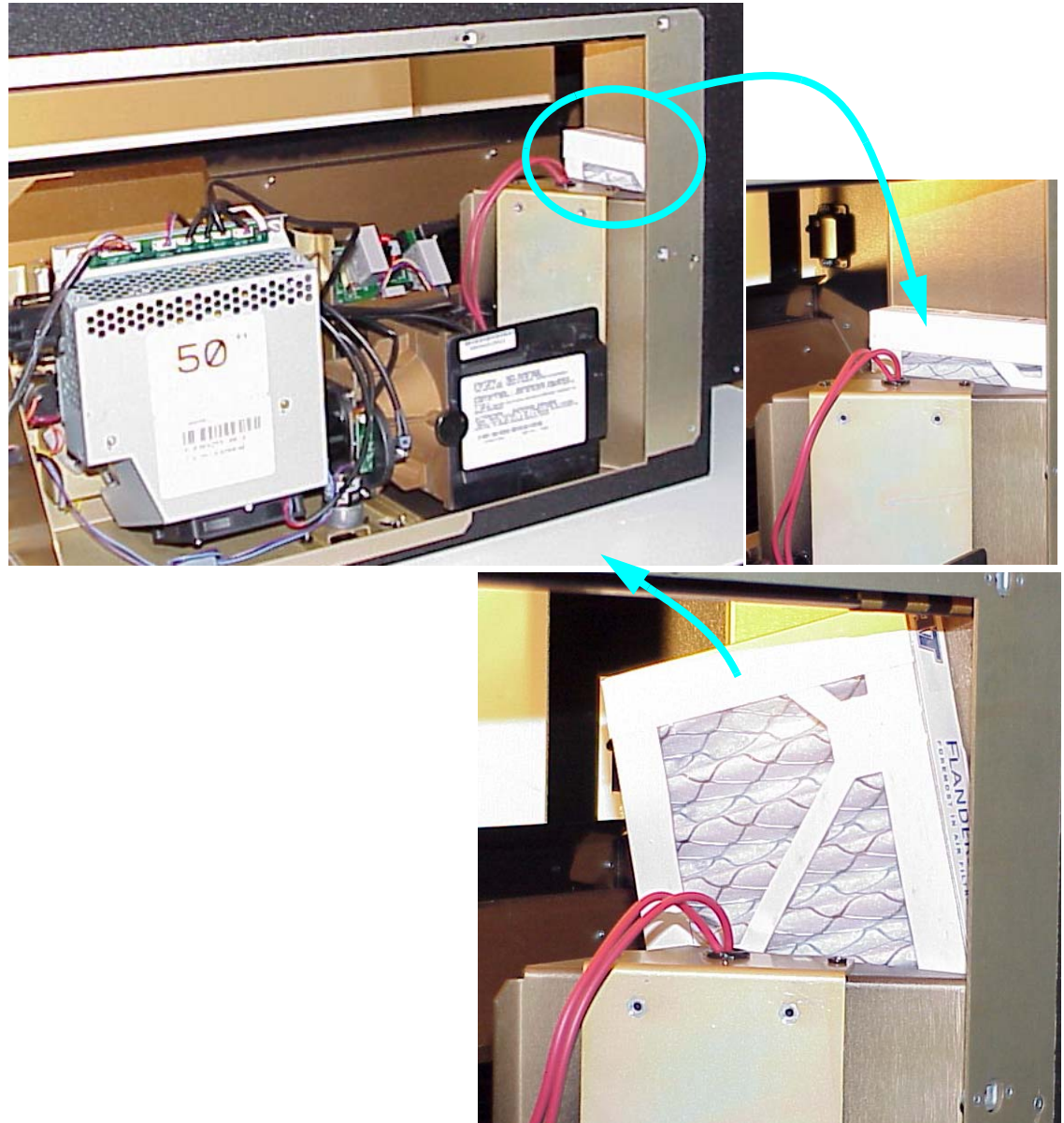
Task 4.3.2.1: Replacing the Optical Engine

- b** On right side of Optical Engine, connect:
- HDMI cable

5 Return to *Task 4.3 Gain Access to interior of unit* on page 140.

4.3.3 Change Air Filter

- 1 Lift the light shield. (*Task 4.3 Gain Access to interior of unit on page 140*).
- 2 Lift out the air filter, tilting it towards the front of the unit as you lift.



- 3 Insert a new air filter. Confirm that the airflow direction is correct, that is the flow should be into the unit.
- 4 Return to *Task 4.3 Gain Access to interior of unit* on page 140.

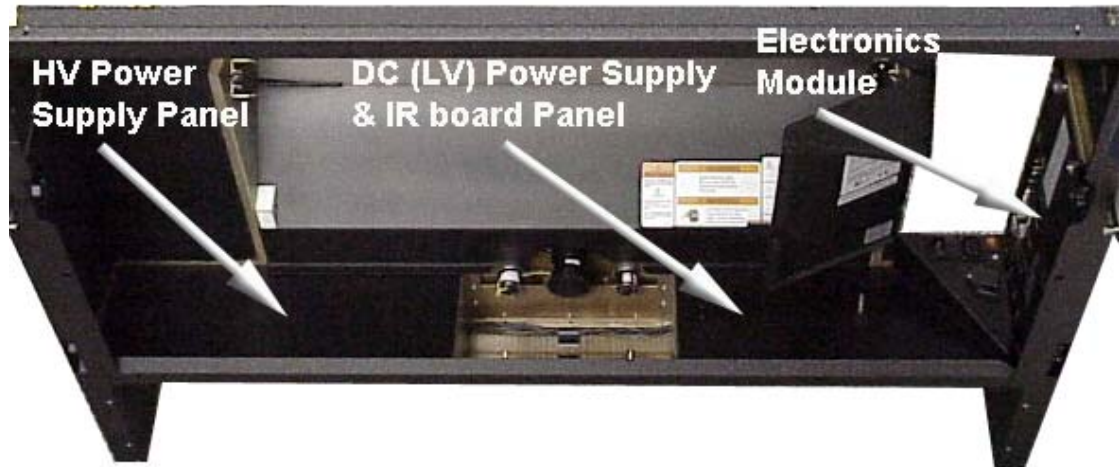
Task 4: Gain Access: Remove Rear Panel

Task 4.3: Gain Access to interior of unit

Task 4.3.4 Gain Access: Remove High-Voltage Power Supply Panel

4.3.4 Gain Access: Remove High-Voltage Power Supply Panel

- 1 Lift the light shield (*Task 4.3 Gain Access to interior of unit on page 140*).
- 2 Remove the three screws that secure the panel.

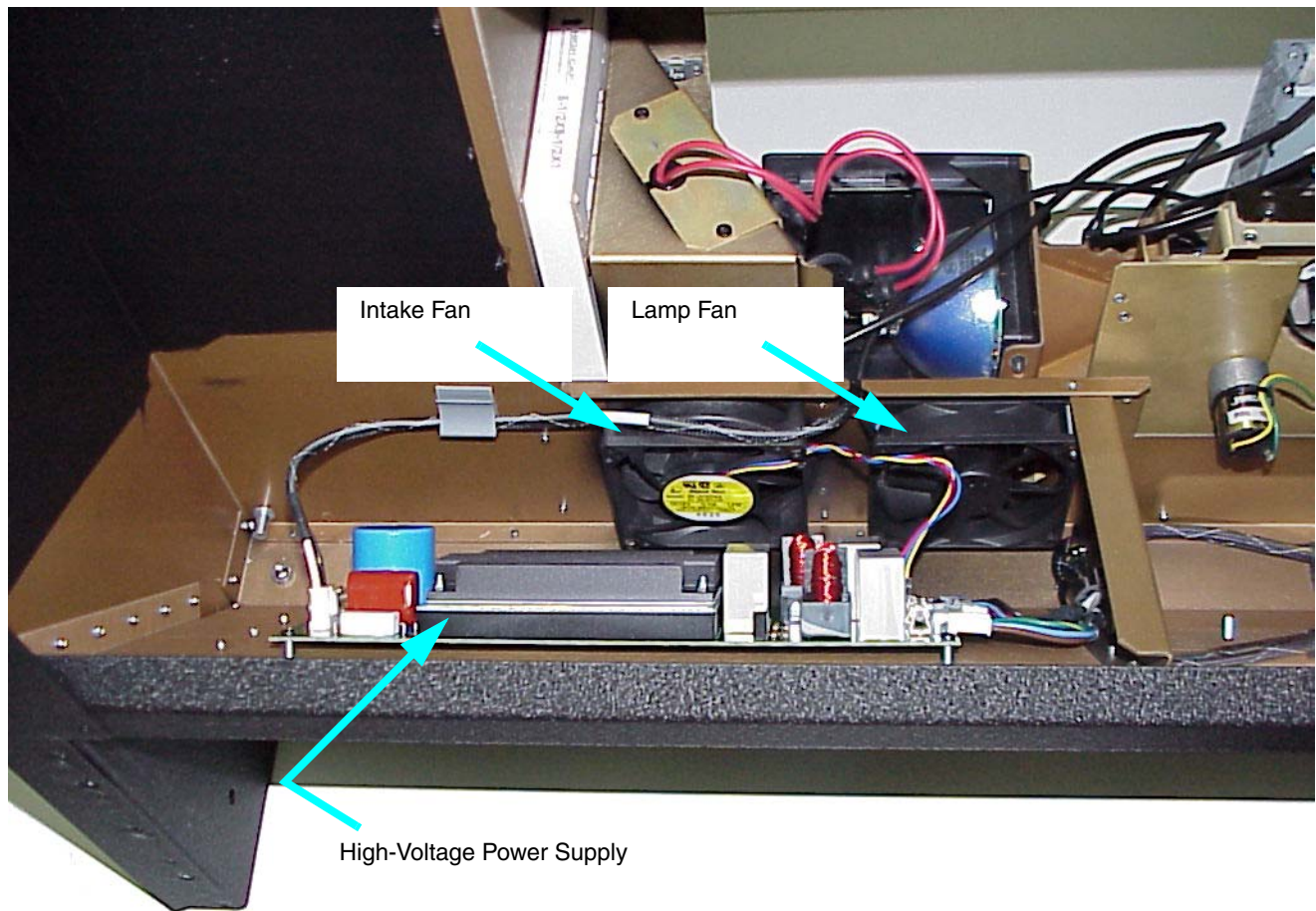


High-Voltage
Power Supply
Cover

Note: Notched
end at left side
of chassis



- 3** Remove the High-Voltage Power Supply Panel.
Within this cavity are three parts: an Intake Fan, a Lamp Fan, and the High-Voltage Power Supply.



Where to go from here

Remove/Replace Intake Fan	149
Remove/Replace Lamp Fan	150
Remove/Replace High-Voltage Power Supply	151

When you have completed the tasks, return here

- 4** Replace the High-Voltage Power Supply Panel and secure with the three screws you removed earlier.
- 5** Return to *Task 4.3 Gain Access to interior of unit* on page 140.

4.3.4.1 Remove/Replace Intake Fan

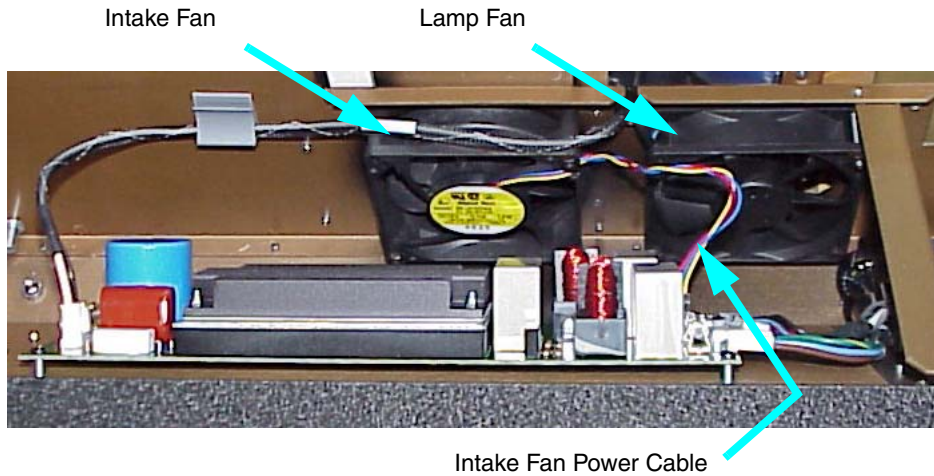
Note: You'll need a ratchet handle and 5/16" socket or combination wrench to remove the mounting nuts because of the limited space within the power supply cavity.

Task 4: Gain Access: Remove Rear Panel

Task 4.3: Gain Access to interior of unit

Task 4.3.4 Gain Access: Remove High-Voltage Power Supply Panel

- 1 Disconnect the Intake Fan power cable attached to the right side of the power supply.



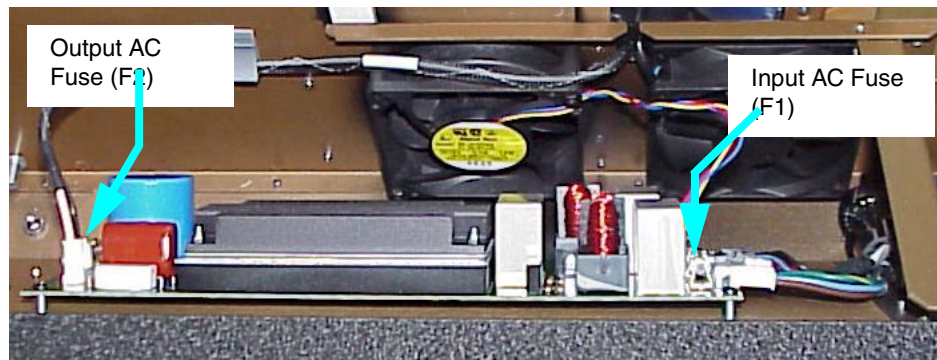
- 2 Remove the mounting nuts from the corners of the Intake Fan.
- 3 Remove the old Intake Fan from the mounting studs.
- 4 Replace the new Intake Fan on the mounting studs. Be sure the label on the fan is visible (label should point to the front of the unit, which is the opposite of the Lamp fan).
- 5 Replace the mounting nuts and gently tighten them.
Caution: Do not over-tighten the mounting nuts. The corners of the fan could break off!
- 6 Reconnect the Intake Fan power cable.
- 7 Return to *Task 4.3.4 Gain Access: Remove High-Voltage Power Supply Panel* on page 148.

4.3.4.2 Remove/Replace Lamp Fan

This part is not yet field-replaceable. Contact Clarity Customer Support for help.

4.3.4.3 Remove/Replace AC Fuse

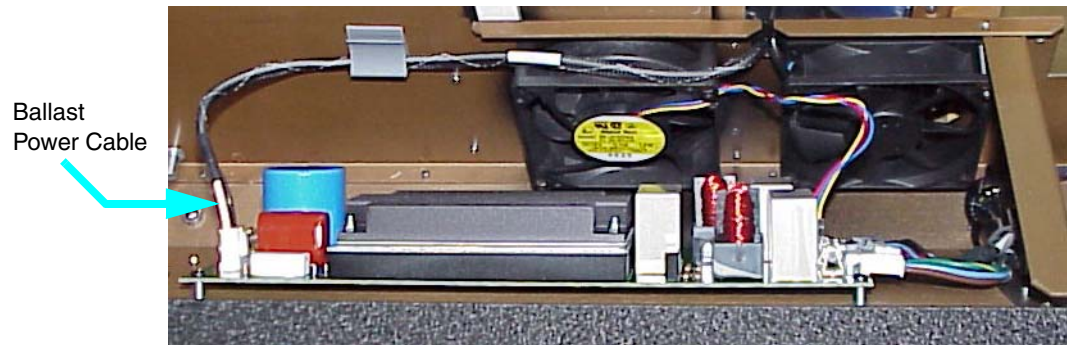
Fuses are located on the right and left sides of the High-Voltage Power Supply.



We suggest that you purchase a few extra fuses (6.25A, 250V, 3AG, Slo-Blo) from an electronics supply store.

4.3.4.4 Remove/Replace High-Voltage Power Supply

- 1 Disconnect all four cables attached to the High-Voltage Power Supply.
 - a The black/white Ballast Power cable (left side of power supply).



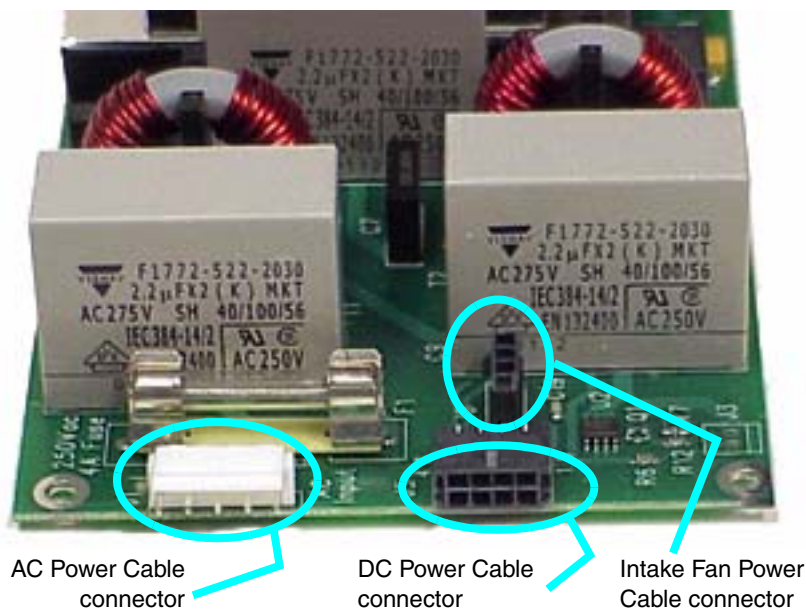
Task 4: Gain Access: Remove Rear Panel

Task 4.3: Gain Access to interior of unit

Task 4.3.4 Gain Access: Remove High-Voltage Power Supply Panel

Task 4.3.4.4: Remove/Replace High-Voltage Power Supply

- b** The Intake Fan power cable (bottom right corner).

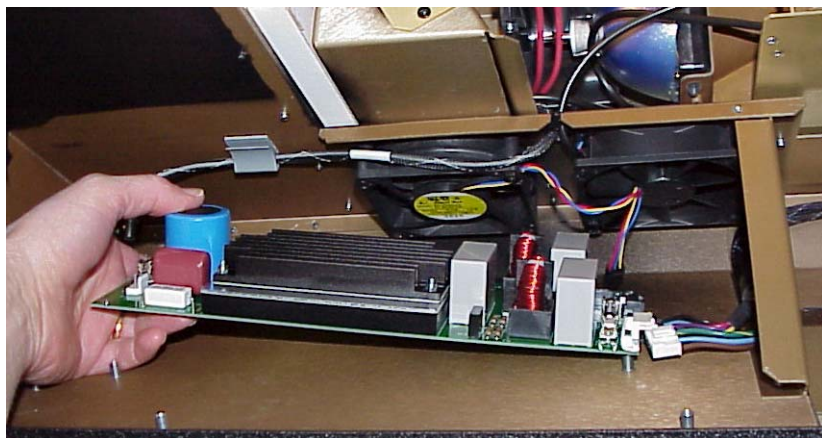


Note: This illustration shows the right side of the High-Voltage Power Supply Board

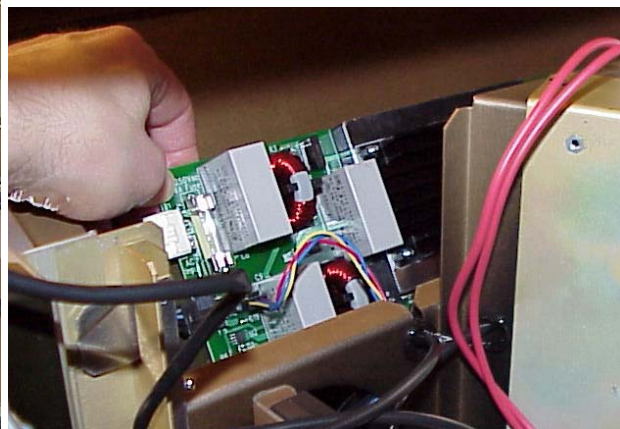
- c** The AC power in cable (top right corner).

- d** The DC power supply cable (center right side).

- 2** Remove the two mounting screws on the front edge.
- 3** Remove the old power supply board by lifting it off the rear snap-mount posts.



Removing High-Voltage Power Supply from the front



Removing High-Voltage Power Supply from the rear

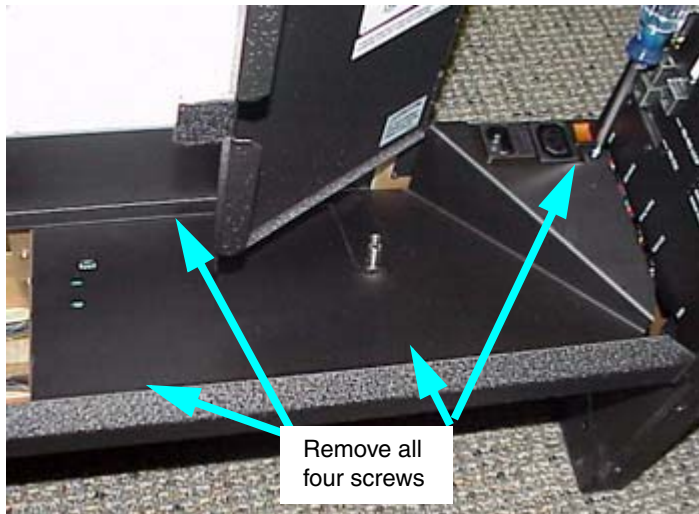
Note: Be sure to leave the Nomex protective shielding in place.

- 4** Remove the new power supply board from the packaging.

- 5 Reconnect the four cables you disconnected earlier:
 - a The black/white Ballast Power cable (left side of power supply).
 - b The Intake Fan power cable (bottom right corner).
 - c The AC power supply cable (top right corner).
 - d The DC power supply cable (center right side).
- 6 Install the new power supply board onto the two rear snap-mount posts, and insert and tighten the two mounting screws.
- 7 Return to *Task 4.3.4 Gain Access: Remove High-Voltage Power Supply Panel* on page 148.

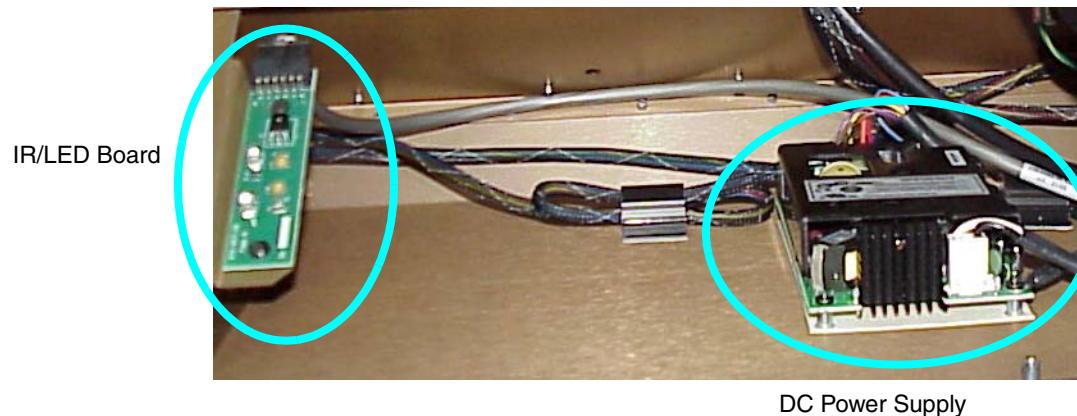
4.3.5 Gain Access: Remove/Replace DC Power Supply Panel

- 1 Lift the light shield (*Task 4.3 Gain Access to interior of unit on page 140*).
- 2 Remove the four mounting screws; three are in the interior of unit; the fourth is in the Electronics Module access area.



- 3 Lower the light shield but do not screw it down.
- 4 Open the Electronics Module door.
- 5 From within the Electronics Module area, lift the DC Power Supply Panel toward the front and up. You may need to push it toward the front from inside the rear panel cavity. Be sure not to scratch the screen with the DC Power Supply Panel.
- 6 Remove the panel through the Electronics Module opening.
- 7 Close the Electronics Module door.

- 8 Lift the Light Shield and latch up in place.
The DC Power Supply cavity is exposed.



Where to go from here

Remove/Replace DC Power Supply	155
Remove/Replace IR/LED Board	158
Remove/Replace AC Power Switch.	159

When you complete the tasks, return here:

- 9 Close the Electronics Module door.
- 10 Pull the Light Shield free of the latch and lower it to its resting place.
- 11 Open the Electronics Module door and feed the DC Power Supply Panel into the interior of the Margay.
- 12 Replace the DC Power Supply Panel.
 - a Slide the DC Power Supply Panel below the Light Shield (you may need to lift the Light Shield slightly) and below the Electronics Module door.

Note: Make sure the mounting tab on the DC Power Supply Panel that fits in the Electronics Module area is above the plate that holds the power switch and plug receptacles.

 - b Screw the panel down with the four mounting screws you removed earlier.

4.3.5.1 Remove/Replace DC Power Supply

Note: You may choose to reverse the order of steps 1 through 4 by removing the cables from the power supply before removing the power supply from the mounting posts.

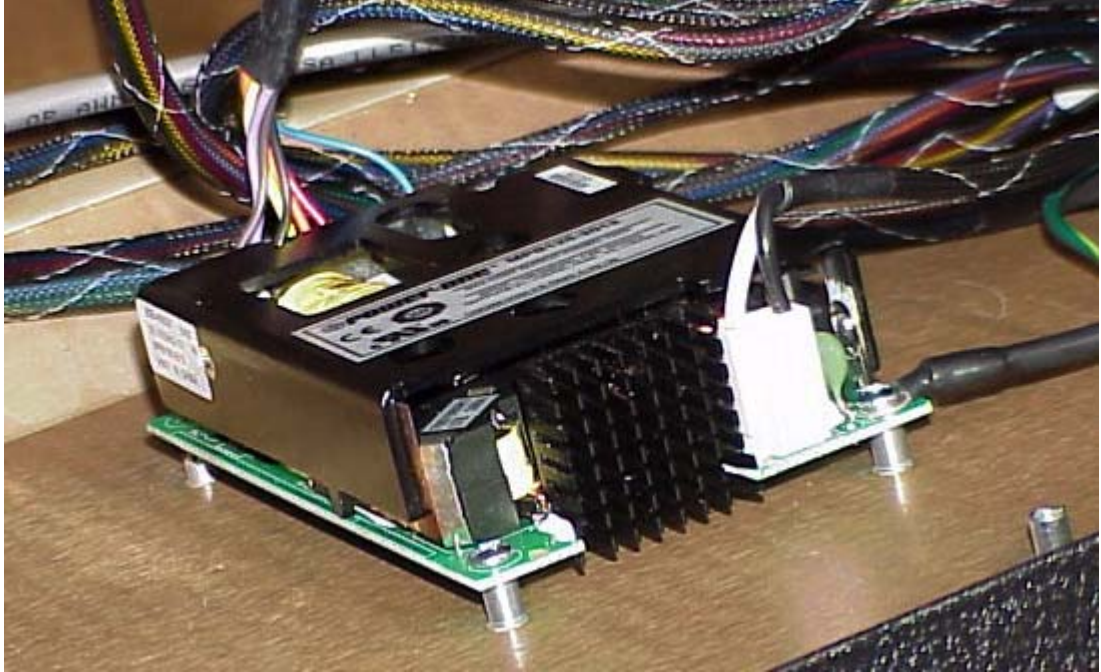
Task 4: Gain Access: Remove Rear Panel

Task 4.3: Gain Access to interior of unit

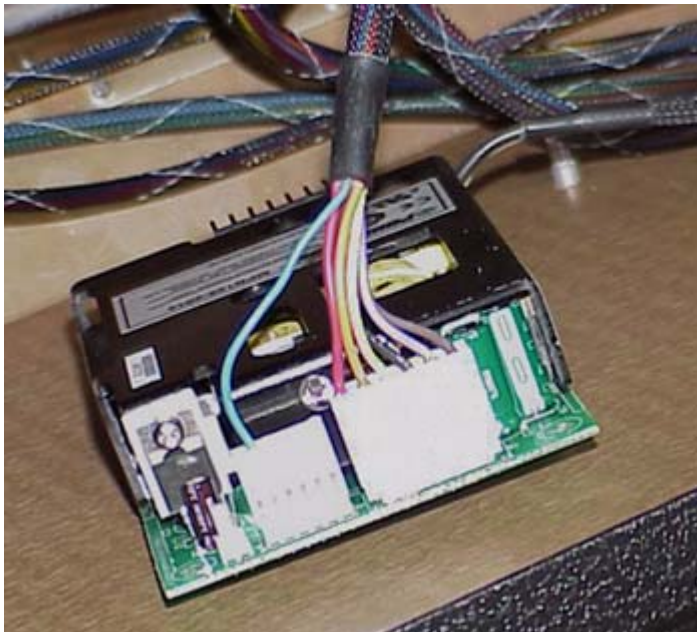
Task 4.3.5 Gain Access: Remove/Replace DC Power Supply Panel

Task 4.3.5.1: Remove/Replace DC Power Supply

- 1 Remove the two mounting screws. Note that the front right mounting screw also secures the grounding wire.



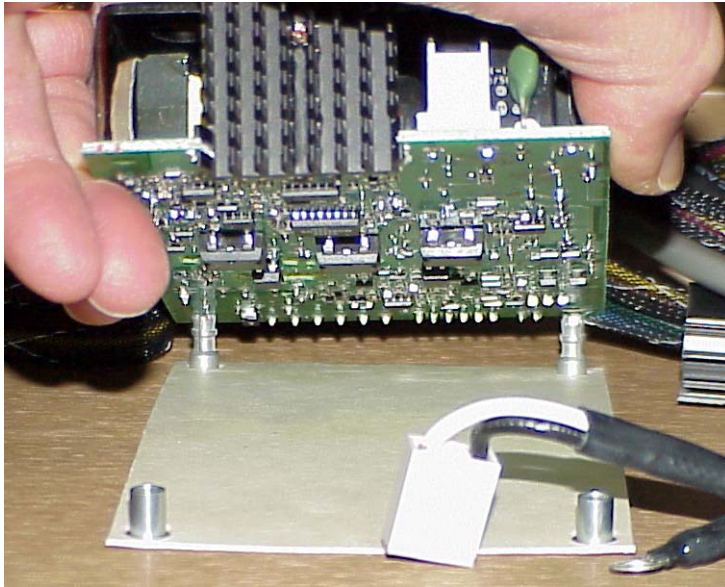
- 2 Remove the two cables at the rear of the DC Power Supply.



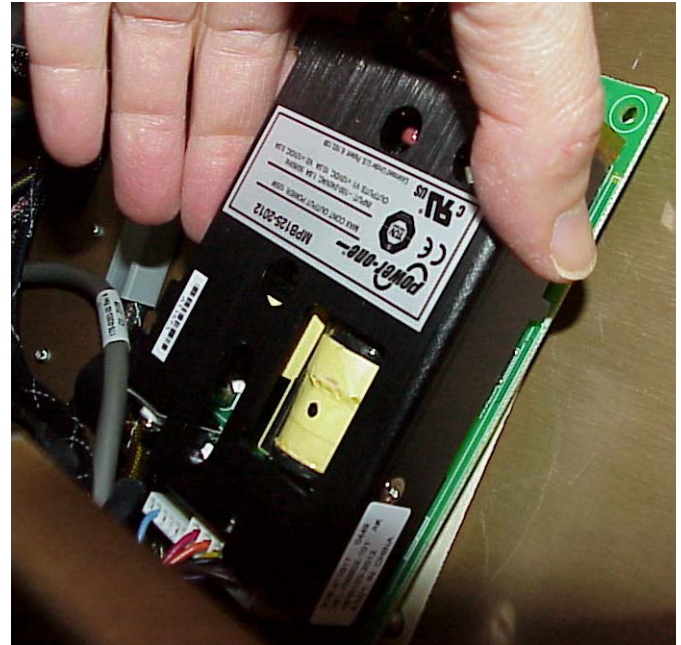
Note: In this photo, the DC Power Supply is turned around to make it easier to see the connectors. Therefore, for this photo, directions are listed for both the actual orientation when in the unit (and the orientation in the photo illustration).

- a The connector on the left (in the photo above, the connector on the right) has two separate safety latches that must be released before removing the cable.

- b** The connector on the right (in the photo above, the connector on the left) does not have a catch. Since it has only one cable, we recommend you detach the cable by pulling on the connector, not the wire.
- 3** Remove the power cable at the front of the DC Power Supply.
- 4** Remove the old DC Power Supply board by lifting it off the rear posts.



Removing the DC Power Supply from the snap-mount posts from the front



Removing the DC Power Supply from the snap-mount posts from the rear

- 5** Remove the new DC Power Supply from its packaging.
- 6** Reattach the cables.
- 7** Install the new DC Power Supply board onto the two rear mounting posts, and insert and tighten the four screws for the new DC Power Supply. Be sure to reconnect the grounding wire to the front right corner of the power supply board and make sure that the grounding crimp is sticking away from and not touching any part of the power supply.
- 8** Return to *Task 4.3.5 Gain Access: Remove/Replace DC Power Supply Panel* on page 154.

Task 4: Gain Access: Remove Rear Panel

Task 4.3: Gain Access to interior of unit

Task 4.3.5 Gain Access: Remove/Replace DC Power Supply Panel

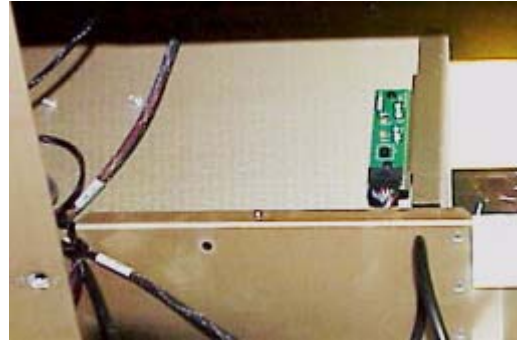
Task 4.3.5.2: Remove/Replace IR/LED Board

4.3.5.2 Remove/Replace IR/LED Board

- 1 Remove the two screws securing the IR/LED board.

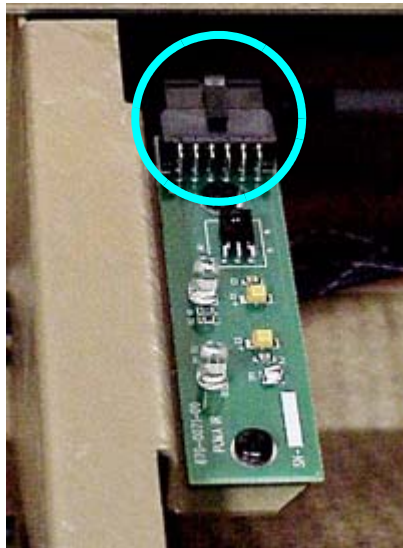


IR/LED Board viewed from the front



IR/LED Board viewed from the rear

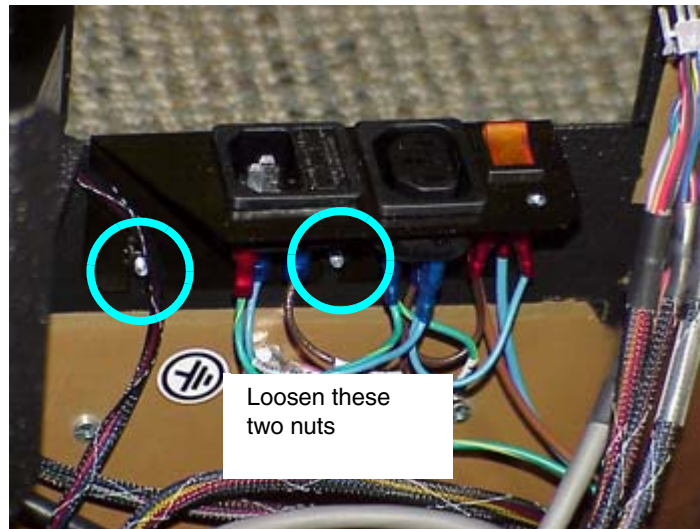
- 2 Disconnect the cable at the rear of the IR/LED board.



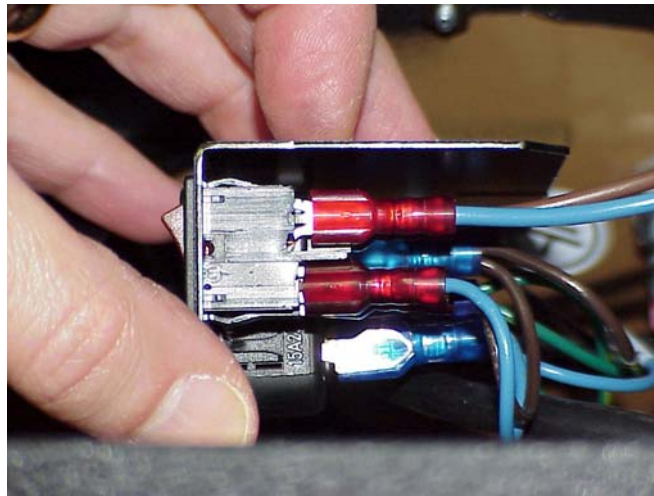
- 3 Remove the new IR/LED Board from its packaging.
- 4 Connect the cable to the rear of the new board.
- 5 Screw the board onto the mounting posts.
- 6 Return to *Task 4.3.5 Gain Access: Remove/Replace DC Power Supply Panel* on page 154.

4.3.5.3 Remove/Replace AC Power Switch

- 1 Remove AC Power-in module by loosening (but not removing) the two securing nuts.



- 2 Slide the module up.
- 3 Turn the module partway over to expose the bottom of the module at the switch end.



- 4 Remove the power cables, noting the locations for each wire: Blue to the right of the switch, black to the front left, brown to the rear left.

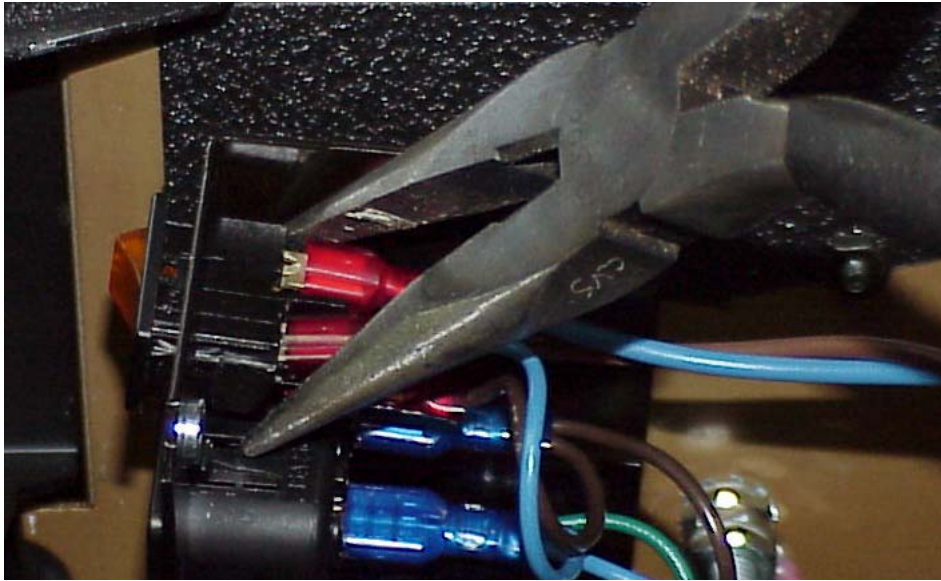
Task 4: Gain Access: Remove Rear Panel

Task 4.3: Gain Access to interior of unit

Task 4.3.5 Gain Access: Remove/Replace DC Power Supply Panel

Task 4.3.5.3: Remove/Replace AC Power Switch

- 5 Using a pair of needle-nose pliers, depress the catches on either side of the switch.



- 6 Slide the switch out of the opening.
- 7 Insert the new switch firmly into the opening and depress until the latches secure the switch in the module.
- 8 Reconnect the cables: Blue to the right of the switch, black to the front left, brown to the rear left.
- 9 Slide the module back onto the mounting studs and tighten the securing nuts.
- 10 Return to *Task 4.3.5 Gain Access: Remove/Replace DC Power Supply Panel* on page 154.

5 Remove Electronics Module

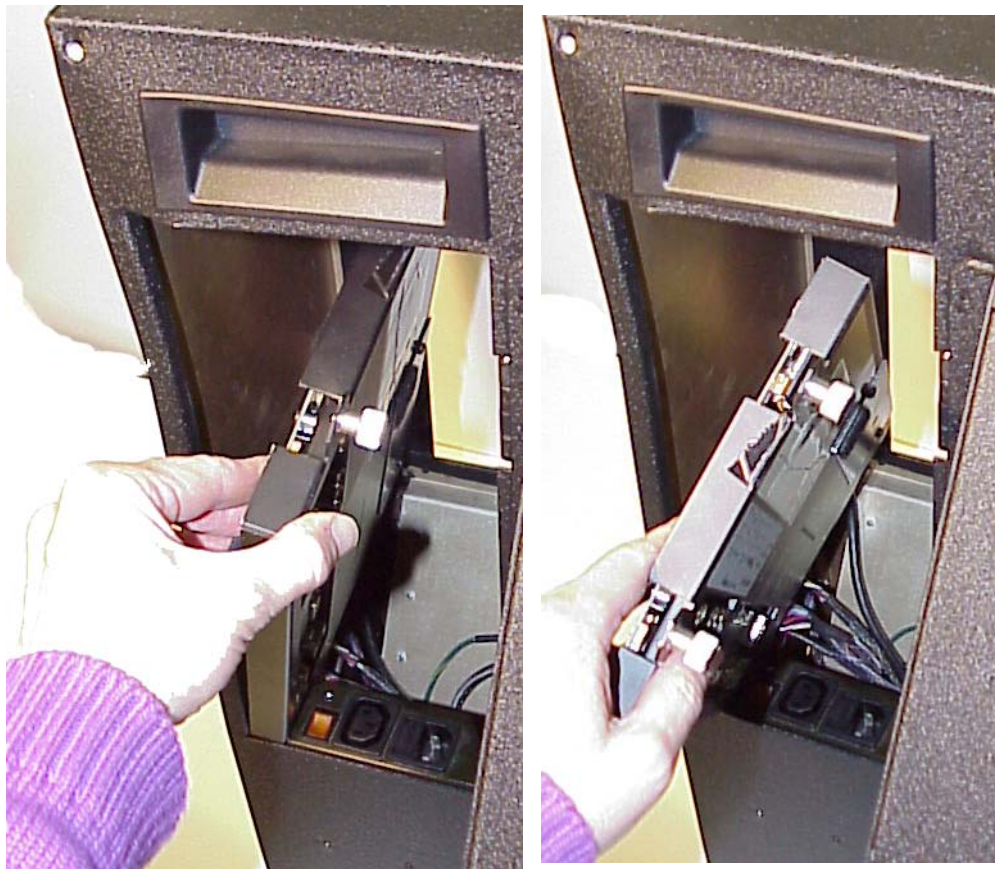
The following procedures require you to use electrostatic discharge safety measures such as a grounding wrist strap and grounded work area.

- 1 Open the Electronics Module door.
- 2 Loosen captive screws at the top of the Electronics Module.



- 3 Carefully lift Electronics Module up and away from its installed position.
This step assumes that you have already removed the DC Power Supply cover (*Task 4.3.5 Gain Access: Remove/Replace DC Power Supply Panel* on page 154) to access the cables and to give you more slack to remove and replace the Electronics Module.

- 4 Tilt the Electronics Module's rear corner down into the cavity below it and tilt it out through the opening.

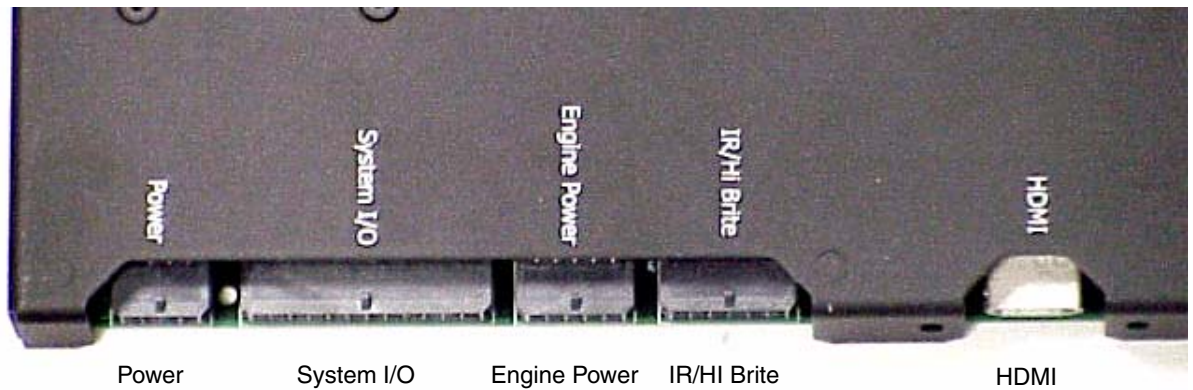


Note: If you are only installing or removing a Video Input Module (VIM), you may leave the cables attached and only *partially* remove the Electronics Module from the chassis. If you choose this path, skip to *Task 5.1 Installing/Removing the Video Input Module* on page 164.

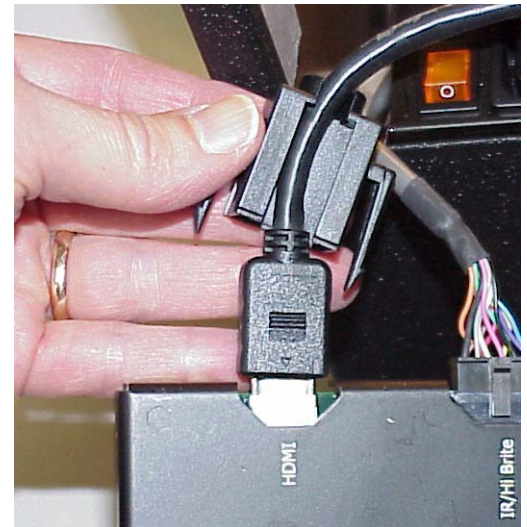
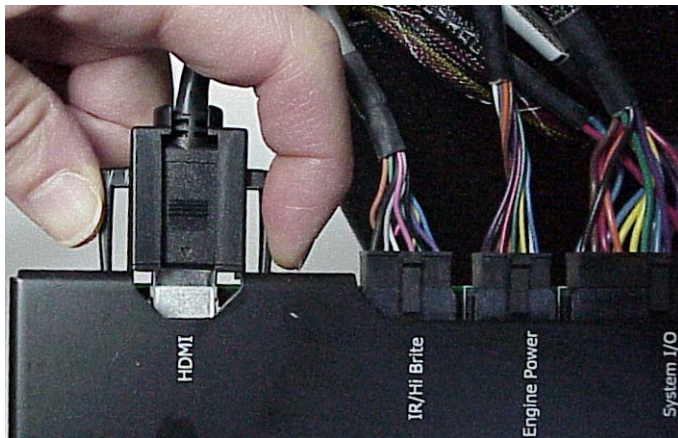
- 5 Disconnect the five cables at the bottom of the Electronics Module.

Note: Be careful not to let the cables fall back in chassis; you may wish to use masking tape to bind them together so they don't fall back into the chassis.

Note: The cables are uniquely keyed to fit into only the corresponding connector.



- a** To disconnect the HDMI cable, remove the keeper on the HDMI cable; don't lose the keeper!

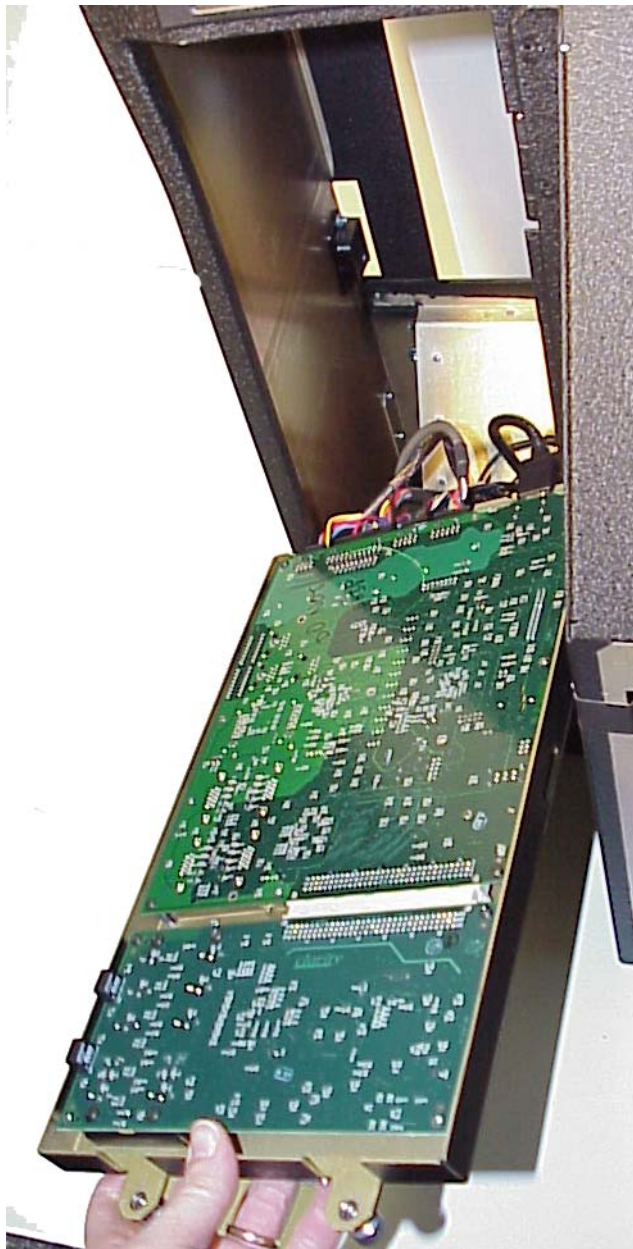


Then, disconnect the HDMI cable.

- 6** Put the Electronics Module on a grounding mat to perform service on it.

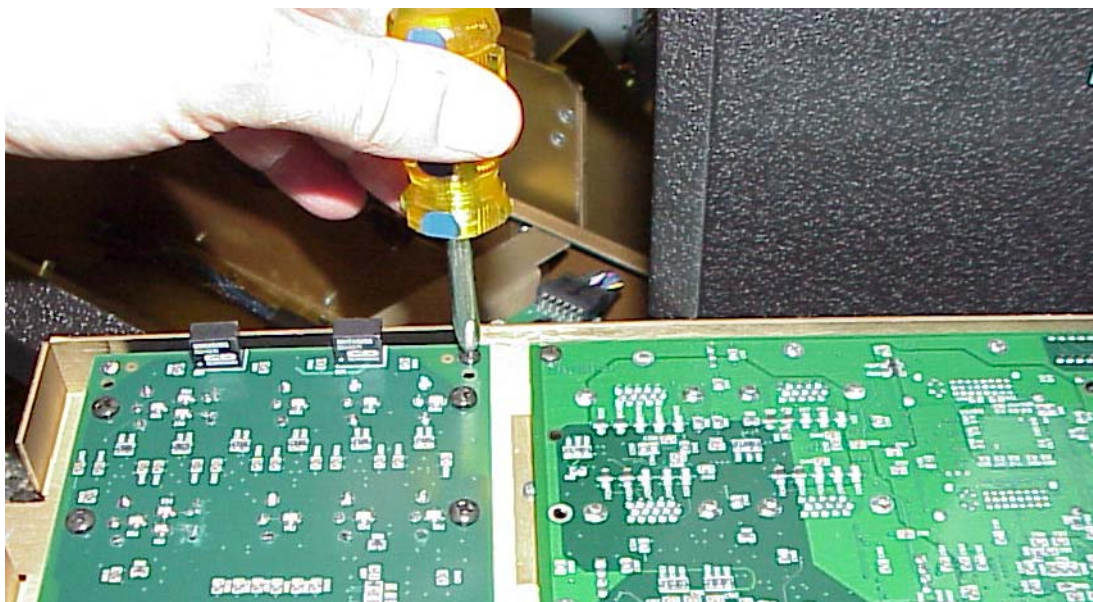
5.1 Installing/Removing the Video Input Module

- 1 Gently turn over the Electronics Module to expose the Video Input Module (VIM) install area (a green circuit board is visible).

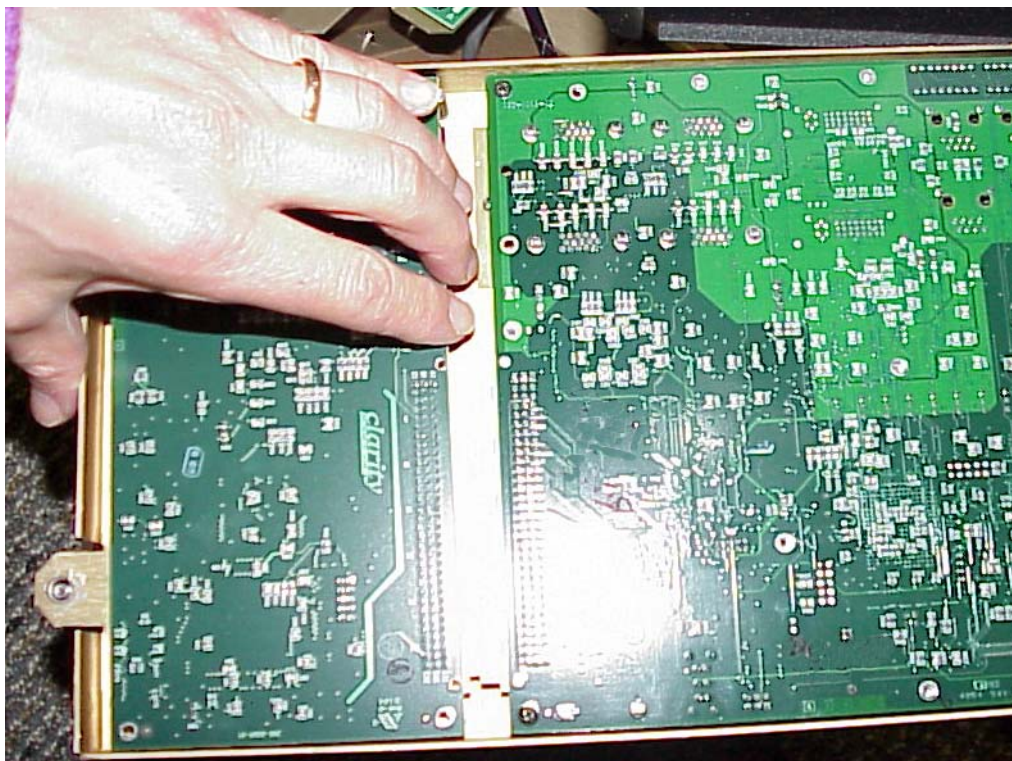


- 2 If you are installing a VIM in a Margay that did not have a VIM, skip to step 5.

- 3 Using a #1 screwdriver, remove the four screws in the corners of the VIM.



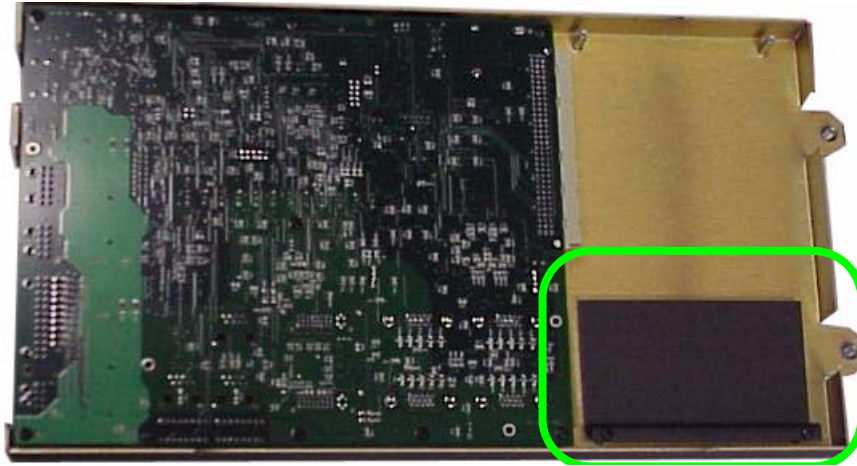
- 4 Pull the VIM out of the connectors and skip to step 6.



Task 5: Remove Electronics Module

Task 5.1: Installing/Removing the Video Input Module

- 5 If you are installing a VIM in an Electronics Module that did not have a VIM, remove the connector cover on the display.

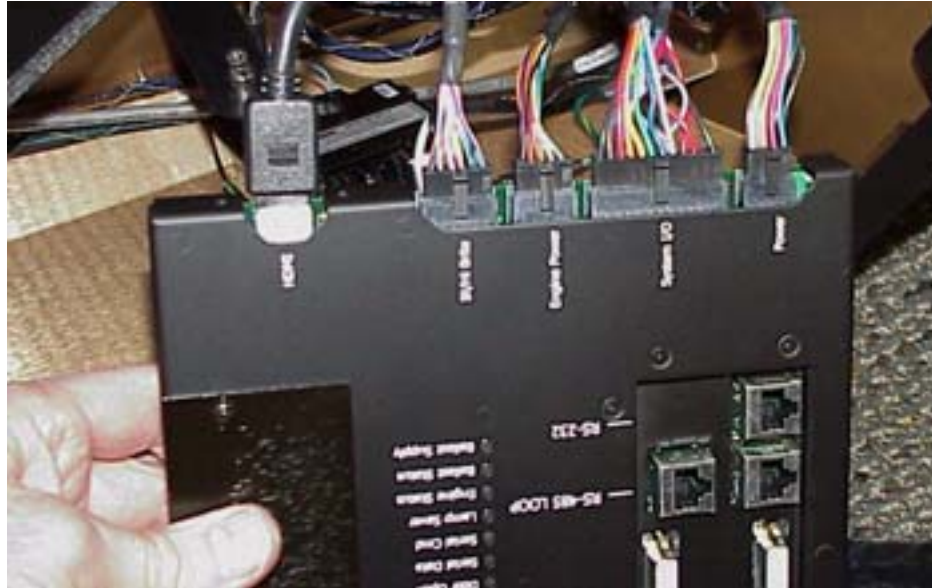


Remove the two screws that secure the connector cover

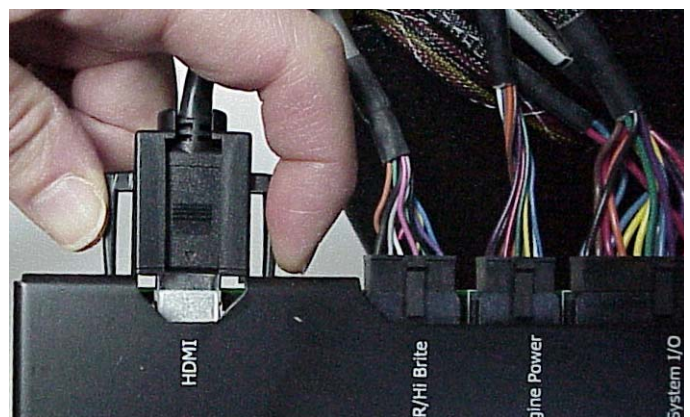
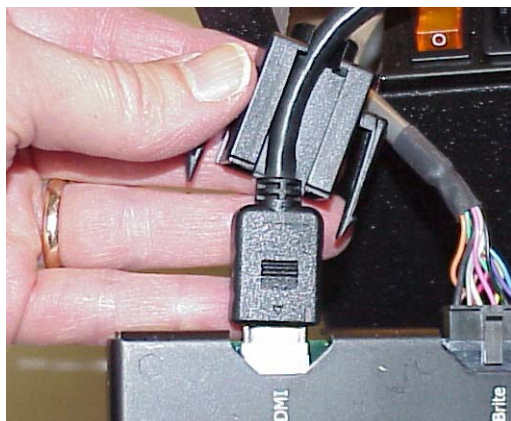
- 6 Remove the new VIM from the packaging.
- 7 Position the VIM so the RCA connectors point down (and the green circuit board is facing up) and align the connector on the VIM with the socket on the Electronics Module.
- 8 Insert the VIM into the connector. You can be sure the VIM is well seated when the mounting holes in the corners align with the mounting posts on the Electronics Module.
- 9 Secure the VIM with the four screws.

5.2 Replace Electronics Module

- 1 Reconnect the five cables you disconnected earlier.
 - a Reconnect the cables to their uniquely-keyed connectors.



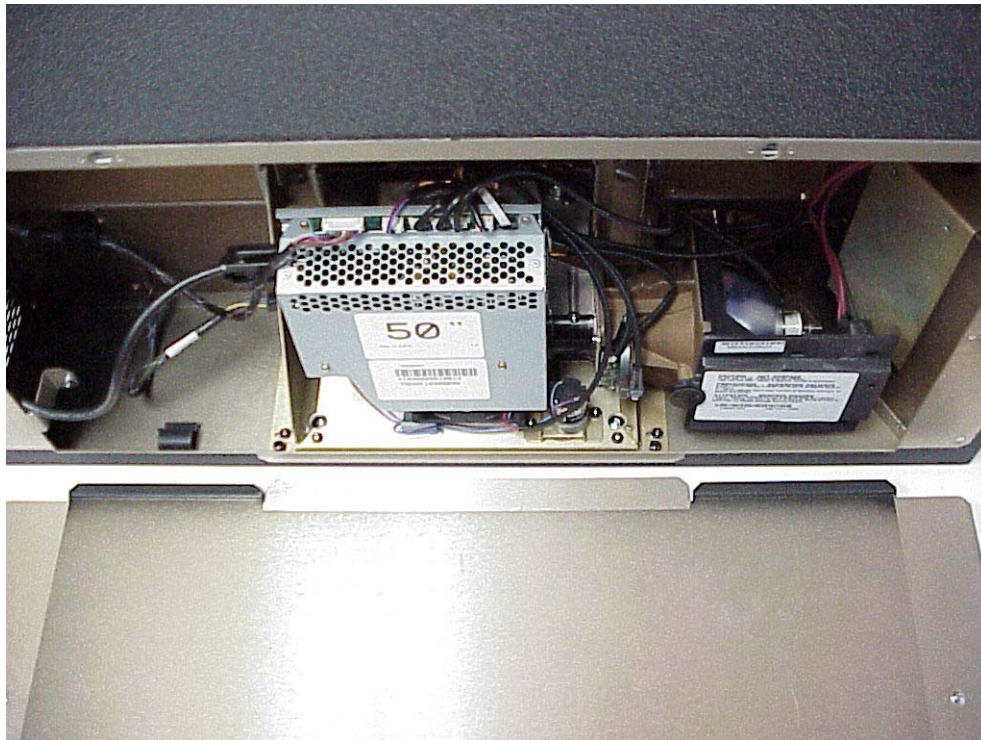
- b After you reconnect the HDMI cable, slide the black snap collar onto the wire.
 - c Slide the keeper into the locking holes on the Electronics Module to hold the HDMI cable in place.



- 2 Make sure the HDMI cable is secured.
- 3 Carefully insert the cable end of Electronics Module into cavity to the right of the DC Power Supply Panel.
- 4 Align the Electronics Module mounting screws with the screw holes and tighten the captive screws.

6 Replace the Rear Panel

- 1 The Rear Panel has three flanges at the bottom.



- 2 The two side flanges fit inside the rear bottom lip of the Margay and the center flange fits outside the bottom lip.

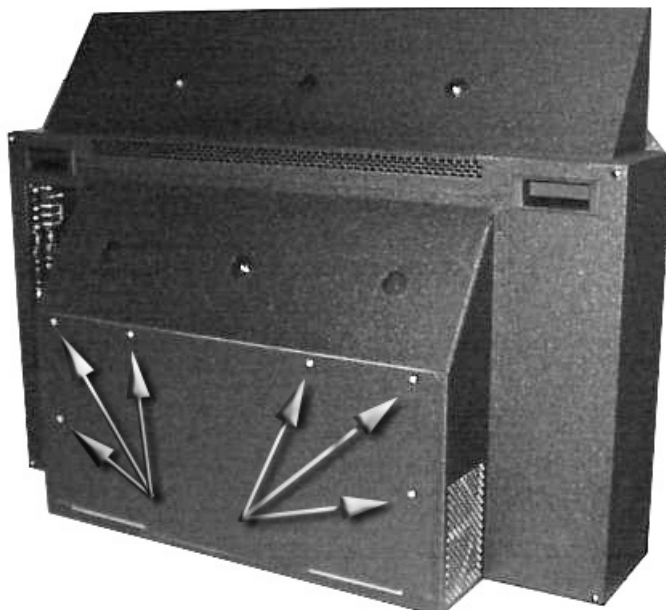


- 3 Position the Rear Panel over the holes for the quarter-turn fasteners and press the panel into place.

Note: If the Rear Panel does not align with the holes, check that it is correctly inserted at the bottom. If the Rear Panel looks like the example below, it is incorrectly inserted in the Margay.



- 4 Tighten the quarter-turn fasteners.



- 5 Replace the power cord.
- 6 Turn on power to the Margay.

Additional Resources

Accessing Clarity's Customer Support Website

Go to www.ClarityVisual.com

Click on LOGIN in upper right banner

Click on lower, blue LOGIN NOW button

User name: tech

Password: help

From there, you can access downloadable utility software, new firmware, user manuals, and service manuals.

To access information for a specific model, click on that model name. For example, to download an electronic copy of this manual, click on Margay Margay Troubleshooting, Maintenance, and Service Manual.

Downloading Additional Documentation and Firmware

Some of the other documents for the Margay, which are available from Clarity's website, are listed below:

Document Name	Contents
User Guide	Complete product information, from installation and configuration to menu and remote control reference
Margay RS232	RS232 control information

Read the instructions listed under "Accessing Clarity's Customer Support Website" on page 171.

Click Margay.

From the list, click to download additional documentation and firmware.

For example, to download RS232 instructions, click on "Technical Reference Manual for Margay".

Downloading Utility Software

Read the instructions listed under "Accessing Clarity's Customer Support Website" on page 171.

Click Utility Software.

From the list of available software, click on the tool you need.

For example, to control the Margay using RS232 commands, download Serial Talk.

You may also wish to download “Using Serial Talk” which is a document that explains how to use Serial Talk.

Contact Clarity Customer Support

via mail: Clarity Visual Systems, Inc.
Clarity Customer Service
27350 SW 95th Ave, Suite 3038
Wilsonville, Oregon USA 97070

via e-mail: service@clarityvisual.com

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The screenshot shows the Clarity Visual Systems website in a Microsoft Internet Explorer browser window. The address bar shows <http://www.clarityvisual.com/login/spec>. The website has a navigation bar with links: HOME | APPLICATIONS | PRODUCTS & SERVICES | SUPPORT | ABOUT CLARITY | NEWS | LOGIN. The date is September 20, 2005.

Consultants & Designers

- Overview
- Technical Resources
- Field Replaceable Unit (FRU) List
- Policies and Processes
- Utility Software
- CAD Drawings
- Tools
- Service Training
- List Pricing

Overview

For consultants and designers, the following information is available for download:

Technical Resources

- Bay Cat (SN-4610-1080)
- Bay Cat X (SN-4620-1080)
- Bengal (SN-6010-720)
- Bobcat I (SN-4025-WX)
- Bobcat II (SN-4035-WX)
- Bobcat X (SN-4045-WX)
- Cheetah (VN-4020-V)
- Cougar (WN-5220-S)
- Jaguar (WN-5220-V)
- Leopard (VN-3820-VA)
- Lion X, SX, UX (WN-6720-X, WN-6720-SX, WN-6720-UX)
- Lion XP, SXP, UXP (WN-6720-XP, WN-6720-SXP, WN-6720-UXP)
- Lion XL, UXL (WN-6750-XL, WN-6750-UXL)
- Lynx (SN-4215-P)
- Margay (WN-5040-720)
- Panther (PN-6730-UX & PN-6740-UX)
- Panther UXP (PN-6740-UXP)
- Puma (WN-5010-X, WN-5020-XP, WN-5020-UXP)
- Tiger (WN-5240-S)
- Tigress (WN-5230-S)
- Tigress S (WN-5230A-S)
- Tigress X (WN-5230A-X)
- Wildcat (WN-4030-S)
- Wildcat SE (WN-4030-SE)
- WallNet (N-1010)
- Long Distance Courier (LDC-450, LDC-1500)

And more...

- Field Replaceable Unit (FRU) List
- Policies and Processes
- Utility Software
- CAD Drawings
- Tools
- Service Training
- List Pricing

Contact Information

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Annotations:

- An arrow points from the text "To access utilities such as Cube-Control, Serial Talk and others, click here" to the "Utility Software" link in the sidebar.
- An arrow points from the text "To access user guides, service manuals, firm-ware, and other resources for a particular model, click the model name" to the "List Pricing" link in the sidebar.

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